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Australian Institute of Health and Welfare

AIHW

Indigenous eye health measures 2020

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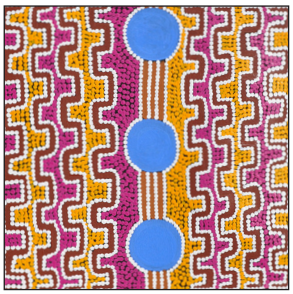

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Please note that there is the potential for minor revisions of data in this report. Please check the online version at www.aihw.gov.au for any amendments.

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A message from the Indigenous Eye Health Data Report Advisory Group

Since it was first published in 2017, the Australian Institute of Health and Welfare's (AIHW's) annual Indigenous eye health measures report has been a valuable tool to monitor progress in driving down rates of preventable vision loss for Aboriginal and Torres Strait Islander people and in improving their eye health.

The report's evidence-based insights help to maintain a strong focus on the gains made and on areas where improvement is still needed, either nationally or in specific regions.

The reporting has evolved over time to provide further information at local levels. This helps communities and services to plan and monitor pathways of care and improved eye health outcomes.

The need is ongoing for strong data collections and reporting not only to monitor changes in the eye health of Aboriginal and Torres Strait Islander people over time and their access to and use of eye health services, but also to identify gaps in service delivery.

Indigenous Eye Health Data Report Advisory Group

The Indigenous Eye Health Data Report Advisory Group was established to provide expert advice to the AIHW on the national Indigenous eye health data report series. Members of this multi-disciplinary group are familiar with eye health conditions, the policy environment and programs aimed at improving eye health, eye health service providers, and data and indicators relevant to monitoring and reporting on eye health.

COVID-19 pandemic

This report includes data from before the COVID-19 pandemic. For data and information that relates to COVID-19, please see our COVID-19 resources <www.aihw.gov.au/covid-19>.

Summary

This is the fourth annual report on the Indigenous eye health measures. These measures were developed to provide an evidence base to monitor changes in eye health among Aboriginal and Torres Strait Islander people over time, and their use of eye health services.

- Between 2010–11 and 2018–19, the proportion of Indigenous Australians who had an eye health check as part of a health assessment increased from 11% to 30% (based on age-standardised rates).
- In 2018–19, 13% of Indigenous Australians (around 100,700) had an eye examination by an optometrist or ophthalmologist.
- In 2016–18, the age-standardised cataract surgery rate for Indigenous Australians was about 7,400 hospitalisations per 1,000,000 population—an increase of 42% since 2008–10.
- In 2018–19, 16,780 spectacles (26 per 1,000 population) were dispensed to Indigenous Australians under state spectacle schemes by New South Wales, Victoria, Queensland, South Australia and Tasmania (the states and territories able to provide data). Of these, Victoria (2,589 spectacles, 42 per 1,000 population) came closest to meeting the estimated number of spectacles needed—66% of the population-based need met.
- Trachoma is a highly infectious disease of the eye which—if left untreated—can result in scarring, in-turned eyelashes (trichiasis) and blindness.
  - The estimated prevalence of active trachoma among children aged 5–9 in at-risk communities fell from 15% in 2009 to 4.8% in 2012 and has since plateaued at around this level (4.5% in 2019).
  - In 2019, the overall treatment coverage of active trachoma cases in at-risk communities was 89%—that is, 4,711 of 5,294 community members identified as requiring treatment received antibiotics. This included children with active trachoma, along with their household contacts and other community members.
- Diabetic retinopathy is a complication of diabetes which can result in vision loss if not detected and treated early. Among Indigenous Australians who had a diabetes test, the age-standardised proportion who were screened for diabetic retinopathy rose from an estimated 31% in 2008–09 to 37% in 2018–19.
- The number of services provided under the Visiting Optometrists Scheme—which provides specialist eye health services to Indigenous Australians in mainly regional and remote areas—have fluctuated, but overall services more than tripled between 2010–11 (around 8, 300 occasions of service) and 2018–19 (around 25,850).

1

Introduction

Vision loss has a substantial impact on the overall health and wellbeing of Aboriginal and Torres Strait Islander people. It may contribute to reduced quality of life by limiting opportunities for physical mobility, work, education and social engagement. Those with vision loss may also be more dependent on services and other people. They can also face an increased risk of injury or death and have reduced life expectancy (Razavi et al. 2018).

Indigenous Australian children have a lower incidence of poor vision than other Australian children, but the prevalence of vision impairment increases markedly with age—Indigenous Australians over the age of 40 have nearly 3 times the rate of vision loss of other Australians (Foreman et al. 2016).

However, there is some evidence of improvement—findings of the 2016 National Eye Health Survey indicate that the prevalence of blindness among Indigenous Australian adults has declined, possibly related to improvements in prevention and treatment services.

Protective and risk factors for eye health problems

The factors that contribute to poorer eye health for Indigenous Australians are complex and may be related to a range of social and cultural determinants of health. Factors associated with eye health include (Kirby Institute 2019; Razavi et al. 2018; Taylor 2012):

- past eye health—increased incidence of eye injuries, repeated eye infections (for example trachoma)
- accessibility and availability of eye health services—cost, location, transport, delivery of outreach services
- complexity of the eye health system and continuity of care—between general practitioners (GPs), optometrists, ophthalmologists, Aboriginal Health Workers and other health care providers
- other medical factors—age, high blood pressure, obesity, diabetes, low birth weight and malnutrition
- environmental conditions—dust, ultra-violet (UV) exposure, access to nutritional food
- hygiene practices and living conditions—face washing, sanitation facilities, housing conditions, overcrowding
- health behaviours—diet, alcohol and tobacco use
- socioeconomic status—education, employment and income
- geographic region—living in more remote areas.

Barriers to accessing eye health services

Despite higher rates of vision loss, research consistently shows that Indigenous Australians use eye health services at lower rates than non-Indigenous Australians (see for example AIHW 2019, Turner et. al. 2011).

Indigenous Australians face many barriers in accessing eye health services—financial, cultural, social and locational barriers as well as the particular complexities of the eye health system. For example, treatment of eye conditions, such as diabetic retinopathy and cataract, involve complex clinical pathways and a series of visits to different providers (Taylor et al. 2012). This complexity means that people may not complete treatment.

A perceived lack of cultural safety may also act as a barrier for Indigenous Australians in accessing eye care services. For example, patients are more likely to attend ophthalmology appointments if eye clinic staff take a sensitive, patient-centred approach and provide encouragement, reminders and transport (Razavi et al. 2018).

If barriers to accessing eye health services can be overcome, most of the blindness and vision impairment experienced by Indigenous Australians could be prevented or treated, particularly vision loss due to refractive error, cataract and diabetic retinopathy. For example, use of glasses (spectacles) and cataract surgery are 2 relatively low-cost, effective interventions for treating the main causes of vision loss.

Australian governments have put in place programs and services to reduce the barriers to service use for Indigenous Australians, including eye health outreach services, many of which are delivered through Indigenous specific primary health-care services. Other government initiatives include spectacle subsidies, eye screening for people with diabetes, surgical support and funding for the coordination of eye health care among Indigenous Australians.

Services and programs to improve eye health

Eye health services covering the continuum of care include prevention, screening, diagnosis and treatment services. Services are provided by a range of different health-care providers including GPs, optometrists, ophthalmologists, nurses and Aboriginal Health Workers. A broad overview of these services is provided in Table 1.1.

Table 1.1: Continuum of eye care—overview of eye health services

Primary	Secondary	Tertiary
Services	*Services*	*Services*
Eye health promotion Screening for eye health and vision; basic eye checks Treatment of minor eye conditions (e.g. conjunctivitis, removal of foreign bodies) Diagnosis and referral of more complex cases (e.g. diabetes) Coordination of care Follow-up, post-operative care	Eye examinations Diagnosis and treatment of refractive error Diagnosis and referral of more complex conditions (e.g. cataract, treatment for diabetic retinopathy) Prescription and supply of visual aids	Medical treatment of eye conditions Cataract surgery, laser treatment and other eye surgery Prescription of all eye care medications
Providers	*Providers*	*Providers*
GPs Nurses Aboriginal Health Workers	Optometrists Ophthalmologists Eye health support staff	Ophthalmologists Ophthalmic nurses Hospital staff
Settings	*Settings*	*Settings*
Private general medical practices Indigenous primary health-care services Community clinics and health centres	Private practices and clinics Sessional services in Indigenous primary health-care and community health centres Outreach services in various settings (e.g. Indigenous primary health-care services; private rooms)	Hospitals Private clinics Outreach services in various settings (e.g. regional hospitals; Indigenous primary health-care services)
Access	*Access*	*Access*
No referral required, but optometrists may refer clients	No referral required, but GPs can refer clients	Referral required if claiming Medicare GPs and optometrists can refer clients

Australian Government initiatives to improve eye health

Responsibility for eye health services in Australia is shared across different levels of government, the private sector, health-care professions and non-government organisations. Their respective initiatives to prevent and treat vision loss for Aboriginal and Torres Strait Islander people are having a positive impact on Indigenous Australians access to eye health services.

The Australian Government has committed to ending avoidable blindness in Indigenous communities by 2025 (see Box 1.1). Accordingly, the government is funding a range of initiatives to prevent and treat vision loss, including:

- delivery of health outreach services—funding agreed to 2024
- provision of eye health equipment and associated training for health professionals—the Provision of Eye Health Equipment and Training project has been extended to June 2021
- the Aboriginal and Torres Strait Islander National Subsidised Spectacles Scheme—initiative extended to 2021
- trachoma control, surveillance and reporting
- coordination and integration of eye health services to enhance the patient experience across the continuum of eyecare, and activities to improve access to eye-surgery through surgical support
- better data to inform eye health research, monitoring and need
- Medical Benefits Schedule (MBS) items for screening and treatment of eye conditions.

Box 1.1: Commitment to ending avoidable blindness in Indigenous communities by 2025

As part of Australia's Long Term National Health Plan—to build the world's best health system (August 2019)—the Australian Government will develop and implement a 10-year National Preventive Health Strategy, including an Indigenous Preventive Health Plan.

One of the key targets for improved health outcomes under the Indigenous Preventive Health Plan, is ending avoidable blindness in Indigenous communities by 2025 (Department of Health 2019).

Other initiatives include:

- development of a new National Agreement on Closing the Gap. For the first time, this has been undertaken in genuine partnership between Australian governments and the Coalition of Aboriginal and Torres Strait Islander Peak Organisations (see Box 1.2)
- *Strong eyes, strong communities—a five year plan for Aboriginal and Torres Strait Islander eye health and vision 2019–2024*, a plan to close the gap for vision and achieve a world class system of eye health and vision care for Indigenous Australians (Vision 2020 Australia, 2018). The plan has been adopted in principle by the Council of Australian Governments Health Council and is now 1 of 4 roadmaps being progressed by the Australian Health Ministers' Advisory Council to consider high priority health issues for Aboriginal and Torres Strait Islander people
- consolidation of outreach service delivery standards. The Department of Health has been working to consolidate program guidelines for several outreach programs that support improved access to eye care. Future work will be in line with the recommendation of *Strong eyes, strong communities*; namely that eye health outreach programs be reviewed to maximise funding flexibility, reduce practical barriers to local access, minimise duplication and support innovation
- the second National Eye Health Survey in 2021 will obtain updated data on the incidence of vision loss, blindness and eye disease in Australia. The previous survey was conducted in 2016. This will help to measure progress in improving eye health
- development of promotional materials by the University of Melbourne's Indigenous Eye Health Unit (IEHU) and its partners, aimed at eliminating trachoma and other infectious diseases. Existing messages around hand washing and good hygiene have been expanded to prevent the spread of COVID-19 (IEHU 2020)
- release of the World Health Organization's World report on vision in 2019 (see https://www.who.int/publications/i/item/world-report-on-vision)
- co-sponsorship by the Australian Government in 2020 of a resolution to reinforce the importance of continued investment in eye care, and to integrate eye health into broader health systems (see https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/australia-leads-the-way-on-global-health-action).

Box 1.2: The National Agreement on Closing the Gap, July 2020

Closing the Gap is a government framework aiming to reduce disadvantage among Aboriginal and Torres Strait Islander people. In 2008, Australian governments first agreed to targets to 'close the gap' between Indigenous and non-Indigenous Australians in life expectancy, child mortality, education and employment. With four of the seven targets expiring unmet, a new approach was needed.

The new National Agreement on Closing the Gap is a marked shift in the approach to the Closing the Gap framework. The agreement represents the culmination of a significant amount of work by the Joint Council on Closing the Gap in partnership between all Australian governments and the Coalition of Aboriginal and Torres Strait Islander Peak Organisations.

This is the first time an agreement designed to improve life outcomes for Aboriginal and Torres Strait Islander people has been developed with Aboriginal and Torres Strait Islander people. The agreement was launched on 30 July 2020 by Prime Minister Scott Morrison, Minister for Indigenous Australians Ken Wyatt, and Pat Turner, the convenor of the Coalition of Peaks—a representative body of more than fifty Aboriginal and Torres Strait Islander community controlled peak organisations that have come together to partner with Australian governments on closing the gap.

The agreement is available at closingthegap.gov.au.

About this report

Indigenous eye health measures 2020 is the fourth annual report on Indigenous eye health measures. Since the first report (published in 2017), there have been substantial improvements in the rate of Indigenous Australians accessing cataract surgery, diabetic retinopathy screening and eye health exams.

These reports collate the latest data on the 23 Indigenous eye health measures. They present information on:

- the prevalence and causes of vision loss and blindness
- detection and screening of problems
- eye health treatment services
- the eye health workforce and outreach programs (Table 1.2).

Table 1.2: Indigenous eye health measures

Prevalence
1.1 Prevalence of vision impairment and blindness
1.2 Main causes of vision impairment and blindness
1.3 Prevalence of trachoma and trichiasis
Diagnosis and screening services
2.1 Eye health problems managed by GPs
2.2 Annual health assessments
2.3 Eye examinations undertaken by an eye care professional
2.4 Target population screened for diabetic retinopathy
2.5 Trachoma and trichiasis screening coverage
2.6 Undiagnosed eye conditions
Treatment services
3.1 Hospitalisations for diseases of the eye
3.2 Hospitalisations for injuries to the eye
3.3 Hospitalisations for eye procedures
3.4 Cataract surgery rate
3.5 Cataract surgical coverage rate
3.6 Waiting times for elective cataract surgery
3.7 Target population treated for diabetic retinopathy
3.8 Trachoma and trichiasis treatment coverage
3.9 Treatment of refractive error
3.10 Spectacles dispensed under state schemes
Workforce and outreach services
4.1 Number and rate of optometrists
4.2 Number and rate of ophthalmologists
4.3 Number and rate of allied ophthalmic personnel
4.4 Occasions of eye health services provided under outreach programs

The naming convention for this report series has been altered to align with the year of publication. The 4 reports in the series are: *Indigenous eye health measures 2016*, *2017*, *2018*, and *2020*.

To report on the eye health measures, 3 types of population rates are used—crude rates, age-specific rates, and age-standardised rates (see Box 1.3).

Supplementary tables with the data for all figures in the report, together with detailed specifications for each measure, are available on the AIHW website <https://www.aihw.gov.au/reports/indigenous-australians/indigenous-eye-health-measures-2020/>.

Box 1.3: Population rates

There are 3 types of population rates used to present data in this report:

- Crude rates are the number of events divided by the total population.
- Age-specific rates are the number of events for a specified age group divided by the population in that age group.
- Age-standardised rates are the crude rates for different groups, such as Indigenous and non-Indigenous Australians, applied to a standard population to produce comparable summary rates for both populations. Crude rates change as a result of the age-standardisation process.

Crude rates are used to look at differences within a population, such as the Indigenous population. These can be misleading, however, when comparing populations with different age structures, such as Indigenous and non-Indigenous Australians. It is important to take into account these differences, particularly when looking at conditions that are age related, such as refractive error and cataract.

Age-specific rates allow for comparisons between populations with different age structures. These provide information about the measures of interest for different age groups but are lengthy to summarise and to present.

Age-standardised rates control for the effects of age and provide a summary rate for each of the populations of interest. The resulting rates, however, are not the 'real' or reported rates that occur in each population.

2

How do eye health problems affect Indigenous Australians?

Eye diseases and vision problems are the most common long-term health conditions reported by Aboriginal and Torres Strait Islander people. In 2016, it was estimated that about 15,000 Indigenous Australians over the age of 40 suffered from vision loss (vision impairment and blindness combined) (Foreman et al. 2017). After adjusting for age and sex, Indigenous Australians over the age of 40 had almost 3 times the rate of vision loss of non-Indigenous Australians (Foreman et al. 2017).

The 2016 National Eye Health Survey is the main source of data on the prevalence of eye health problems among Indigenous Australians. The survey used eye examinations to assess vision loss and blindness. Indigenous participants in the survey were aged 40 and over while non-Indigenous participants were aged 50 and over. The key results from this survey are presented in this section. Funding has recently been announced for a second National Eye Health Survey, to be conducted in 2021.

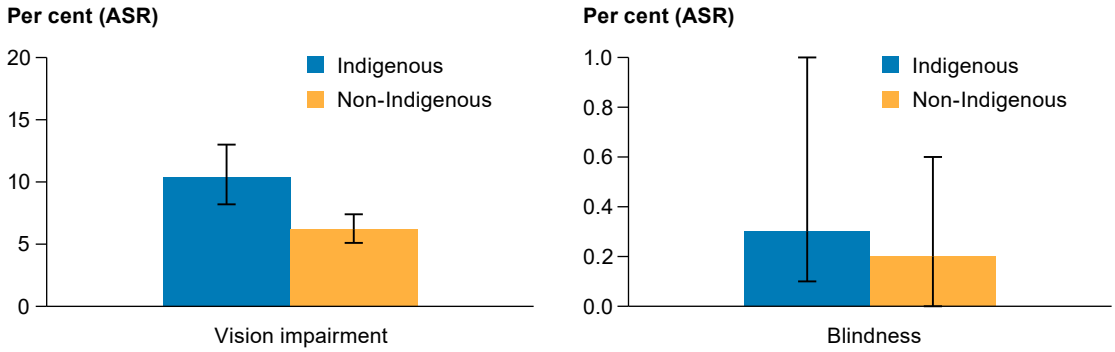
Self-reported data on prevalence of eye and sight problems are available from the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) 2018–19.

How common is vision loss?

In 2016, based on data from the National Eye Health Survey, an estimated 1 in 10 (10%) Indigenous Australians aged 40 and over were visually impaired in both eyes and 1 in 330 (0.3%) were blind in both eyes. This means that around 15,000 Indigenous Australians aged 40 and over suffered from vision loss in 2016—that is, vision impairment and blindness combined (Foreman et al. 2017).

Indigenous Australians aged 40 and over were more likely to suffer vision loss than non-Indigenous Australians over the age of 50 (based on age-standardised rates) (Figure 2.1).

Figure 2.1: Rates of vision loss, by type of vision loss and Indigenous status, 2016



Notes

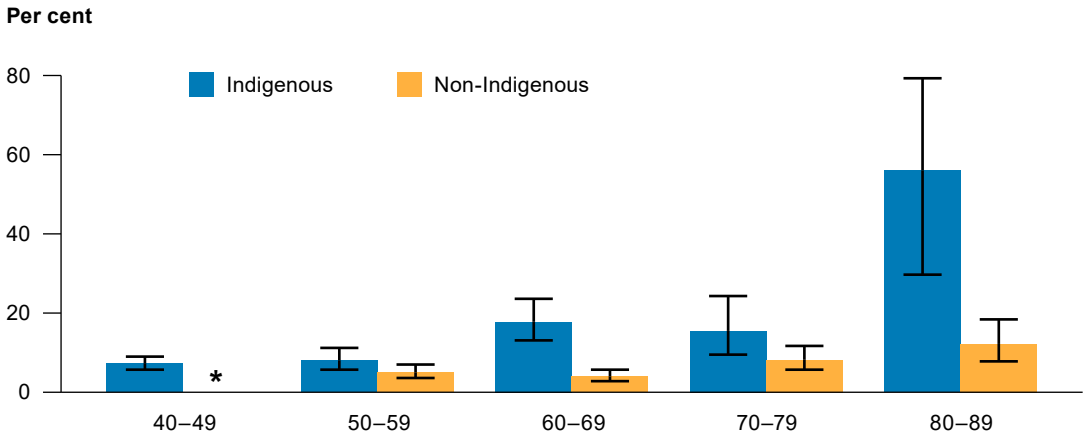
1. ASR refers to the age-standardised rate. Results reported are survey weighted to account for sampling protocol.
2. Error bars are 95% confidence intervals.
3. The National Eye Health Survey included Indigenous Australians aged 40 and over and non-Indigenous Australians aged 50 and over.
4. Data for this figure are available in the supplementary tables.

Source: Foreman unpublished analysis of National Eye Health Survey 2016.

Vision loss increases with age for all Australians, but the rate is higher for Indigenous Australians than non-Indigenous Australians in all age groups over 50.

In 2016, 1 in 14 (7.2%) Indigenous Australians aged 40–49 and more than 1 in 2 (56%) of those aged 80–89 had some form of vision loss (Figure 2.2).

Figure 2.2: Proportion of vision loss, by Indigenous status and age group, 2016



* Data are not available for non-Indigenous Australians aged 40-49 (see footnote 3).

Notes

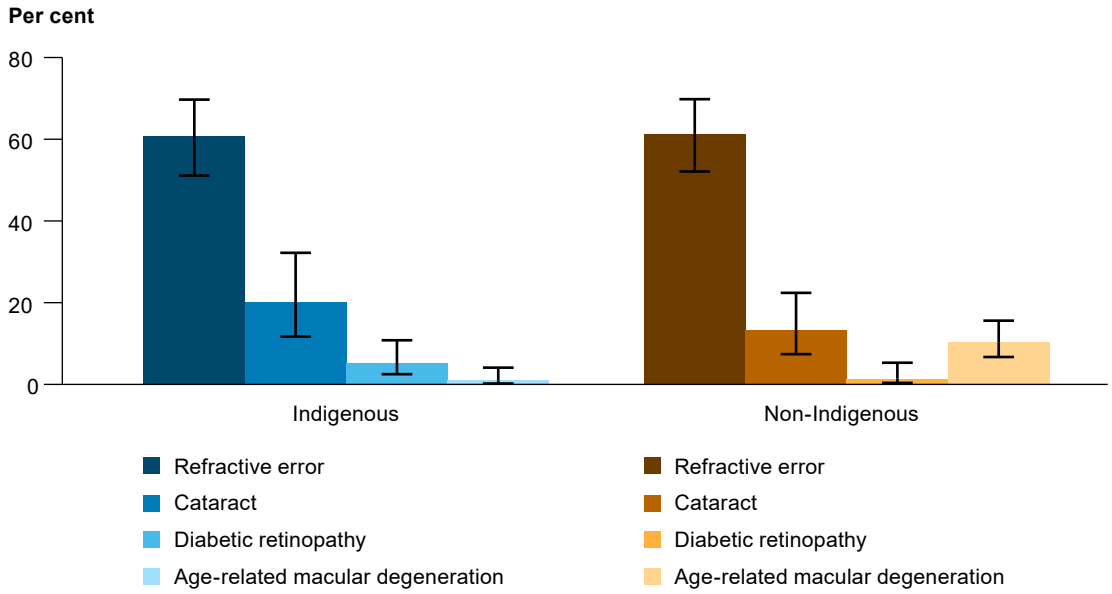
1. Results reported are survey weighted to account for sampling protocol.
2. Error bars are 95% confidence intervals.
3. The National Eye Health Survey included Indigenous Australians aged 40 and over and non-Indigenous Australians aged 50 and over.
4. Data for this figure are available in the supplementary tables.

Source: Foreman et al. 2017 analysis of National Eye Health Survey 2016.

Main causes of vision loss

Results of the 2016 National Eye Health Survey showed that the 3 main causes of vision loss for Indigenous Australians aged 40 and over were refractive error (61%), cataract (20%) and diabetic retinopathy (5.2%) (Figure 2.3). For non-Indigenous Australians aged 50 and over, the main causes were refractive error (61%), cataract (13%) and age-related macular degeneration (10%).

Figure 2.3: Main causes of vision loss, by Indigenous status, 2016



Notes

1. Results reported are survey weighted to account for sampling protocol.
2. Error bars are 95% confidence intervals.
3. The National Eye Health Survey included Indigenous Australians aged 40 and over and non-Indigenous Australians aged 50 and over.
4. Data for this figure are available in the supplementary tables.

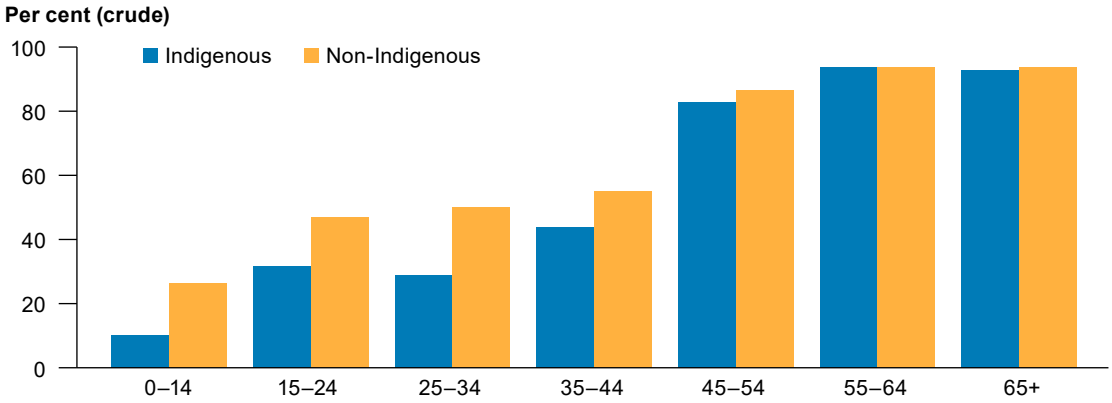
Source: Foreman et al. 2017 analysis of National Eye Health Survey 2016.

Self-reported eye or sight problems

The 2018–19 NATSIHS collected self-reported data on various health conditions, including diseases of the eye/adnexa—referred to as 'eye or sight problems' in this report. Self-assessed measures are subjective. While these measures provide insight on an individual's perception of their eye health, self-reported eye or sight problems have not necessarily been diagnosed by a health professional. They do not include eye conditions that respondents are unaware that they have.

In 2018–19, nearly 4 in 10 Indigenous Australians (38%, or 307,300 people) reported long-term eye or sight problems (ABS 2019). Of these Indigenous Australians, 83% reported that their sight problem had been corrected by glasses or contacts. The self-reported rate of long-term eye or sight problems generally increased with age but decreased with remoteness (Figures 2.4 and 2.5 respectively).

Figure 2.4: Self-reported rate of long-term eye or sight problems, by age group and Indigenous status, 2018–19

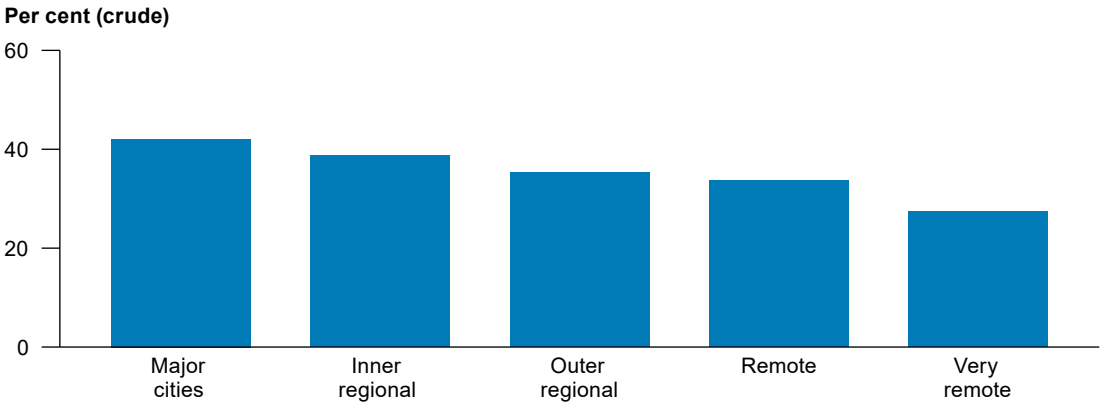


Notes

1. Data for non-Indigenous Australians are for 2017–18.
2. Data for this figure are available in the supplementary tables.

Source: AIHW analysis of ABS 2018–19 NATSIHS and ABS 2017–18 National Health Survey.

Figure 2.5: Self-reported rate of long-term eye or sight problems, Indigenous Australians, by remoteness area, 2018–19



Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of ABS 2018–19 NATSIHS.

3

How are eye health problems identified?

Primary health-care providers play a key role in detecting eye health problems, treating more minor eye conditions and referring patients to more specialised care.

Optometrists and ophthalmologists provide more specialised eye health screening services and can detect more serious eye problems.

Information in this section comes from MBS data.

Indigenous Australians can voluntarily choose to identify as being of Aboriginal and or Torres Strait Islander descent to Medicare, Services Australia. This information is recorded on the Medicare database through the Voluntary Indigenous Identifier (VII). As not all Indigenous Australians choose to identify themselves in this way, in this chapter the MBS data on eye examinations, based on the VII, have been adjusted to reflect the size of the Indigenous Australian population.

As only Indigenous Australians are eligible to receive MBS item 715 or 228 health assessments, it is assumed that all people who receive these health assessments are Indigenous Australians. This data has not been adjusted.

Health assessments

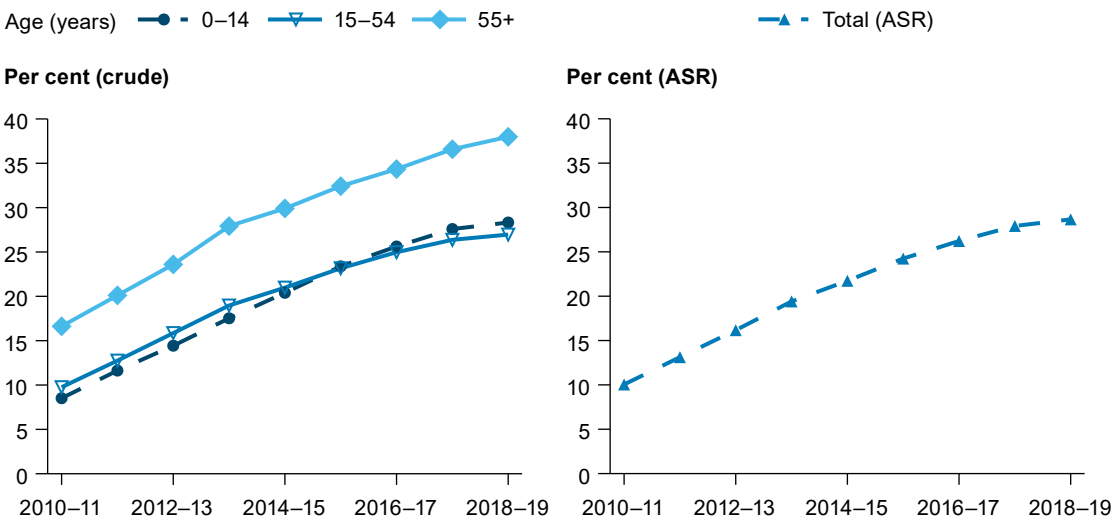
All Indigenous Australians, regardless of age, are eligible for an Indigenous-specific health assessment. The health assessment requirements include an eye health check. There are 2 Indigenous-specific health assessment items listed on the MBS:

- MBS item 715 provided by a GP, available from 1 May 2010
- MBS item 228 provided by a medical practitioner (excluding specialists or consultant physicians), available from 1 July 2018.

Just under 1 in 3 (29% or 241,000) Indigenous Australians had an Indigenous-specific health assessment in 2018–19.

Between 2010–11 and 2018–19, the age-standardised proportion of Indigenous Australians who had a health assessment increased from 11% to 30% (Figure 3.1). This increase occurred across all age groups (0–14, 15–54 and 55 and over), but was highest for those aged 55 and over.

Figure 3.1: Trends in the proportion of Indigenous Australians who had a health assessment, by age group, 2010–11 to 2018–19



Notes

1. ASR refers to the age-standardised rate.
2. Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

The proportion of Indigenous Australians who had a health assessment in 2018–19 varied across Primary Health Networks (PHNs)—ranging from 41% in Western Queensland to 5.4% in Northern Sydney (Figure 3.2).

The proportion of Indigenous Australians who had a health assessment also varied across Roadmap to Close the Gap for Vision regions ('Roadmap regions', see Box 3.1) (Figure 3.3). *Far West* (New South Wales) (51%) and *Townsville and Palm Island* (Queensland) (49%) had the highest rates—nearly 1 in 2 Indigenous Australians in these regions had a health assessment in 2018–19. *East Melbourne* (5.0%) and *Sydney North* (5.7%) had the lowest rates.

Box 3.1: Roadmap to Close the Gap for Vision regions

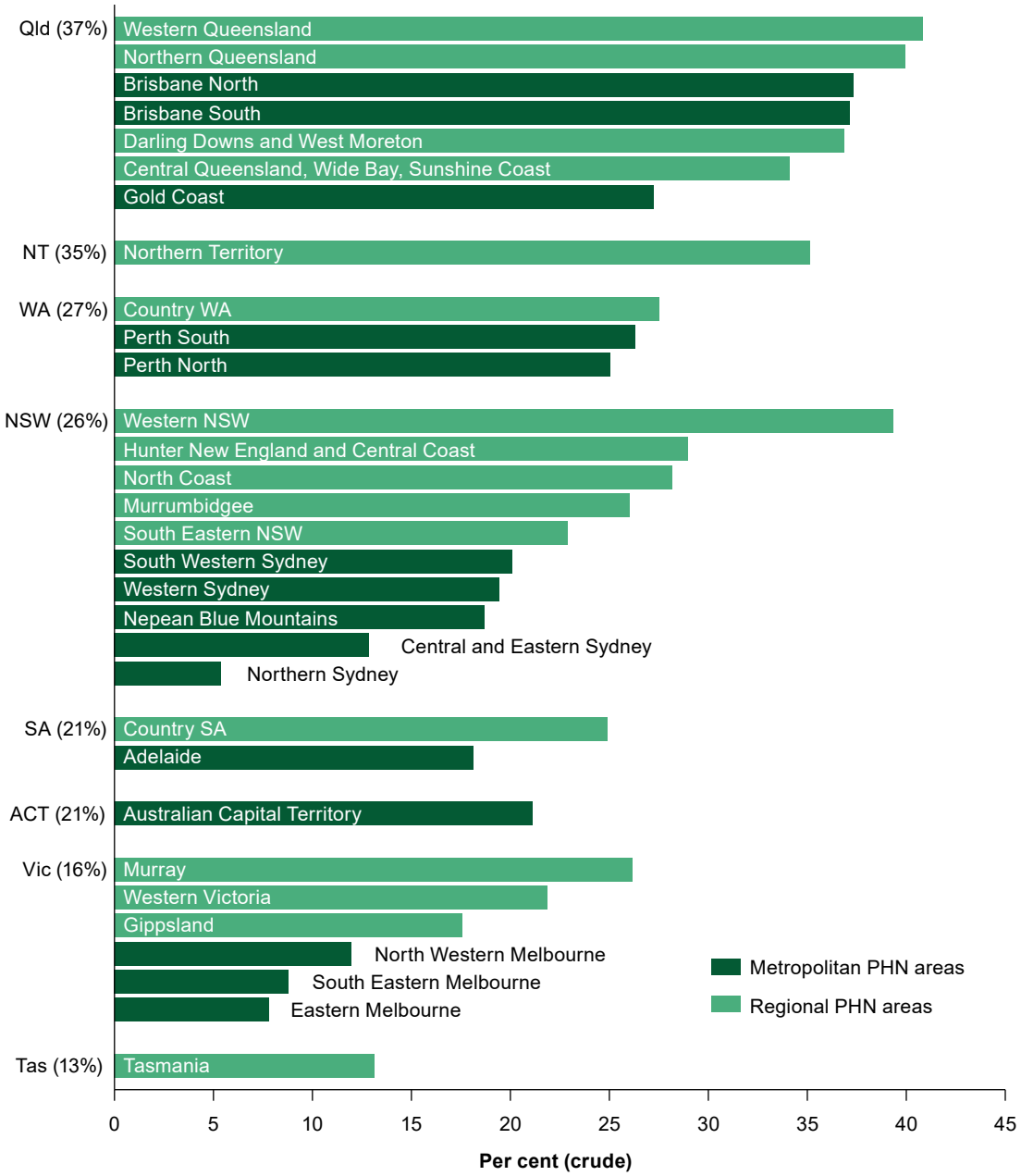
The University of Melbourne's Indigenous Eye Health Unit (IEHU) developed the Roadmap to Close the Gap for Vision project to review health service provision for Indigenous Australians and develop a model to improve their eye care.

Roadmap regions evolved as an outcome of this project to assist communities and services to calculate, plan and monitor improved eye health outcomes in geographic areas covering all of Australia.

Each of these 64 Roadmap regions has an identified 'surgical hub'—a hospital with an operating theatre where cataract surgery can be performed and a network of stakeholders contributing to improved pathways of care and outcomes. Each Roadmap region is contained within a single state or territory. A list of the Roadmap regions are available in the supplementary tables.

Data for some Roadmap regions have been combined for reporting purposes, including across state and territory boundaries. This has been done due to data quality issues associated with deriving reliable Roadmap estimates from the available geographic data in the underlying data sets.

Figure 3.2: Proportion of Indigenous Australians who had a health assessment, by PHN, 2018–19

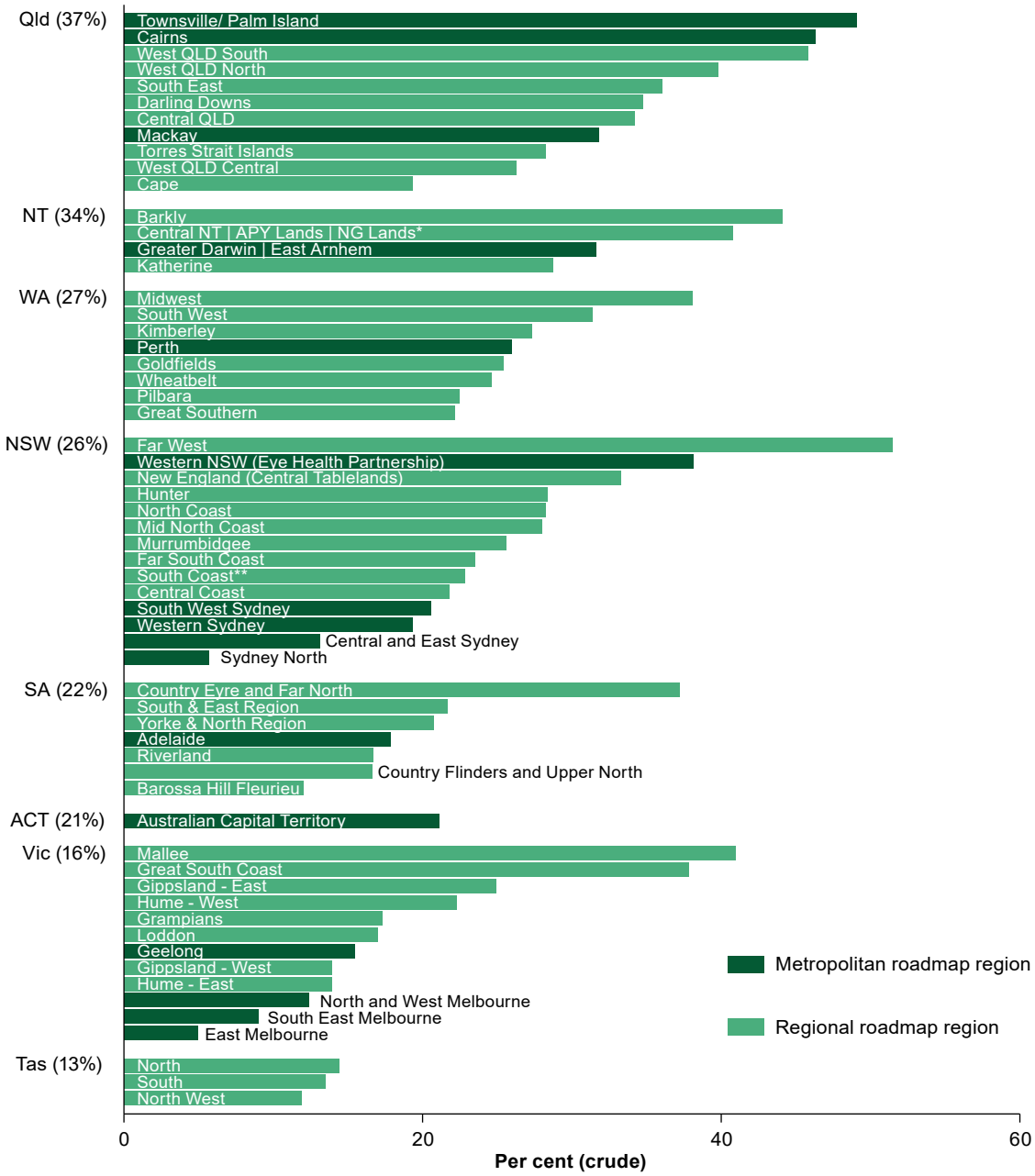


Notes

1. The percentages in brackets beside state/territory labels relate to the overall rate of health assessments in that state/territory.
2. Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

Figure 3.3: Proportion of Indigenous Australians who had a health assessment, by Roadmap region, 2018–19



* APY Lands = Anangu Pitjantjatjara Yankunytjatjara Lands; NG Lands = Ngaanyatjarra Lands.
** *South Coast* region includes the Jervis Bay territory.

Notes

1. The percentages in brackets beside the state/territory labels relate to the overall rate of health assessments in that state/territory.
2. The following Roadmap regions have been combined for reporting purposes: *APY Lands*, *Central Northern Territory* and *NG lands* (the combined area crossed state boundaries, but is presented in the Northern Territory for this graph); and *Greater Darwin* and *East Arnhem* (both within the Northern Territory).
3. Data for this figure are available in the supplementary tables.

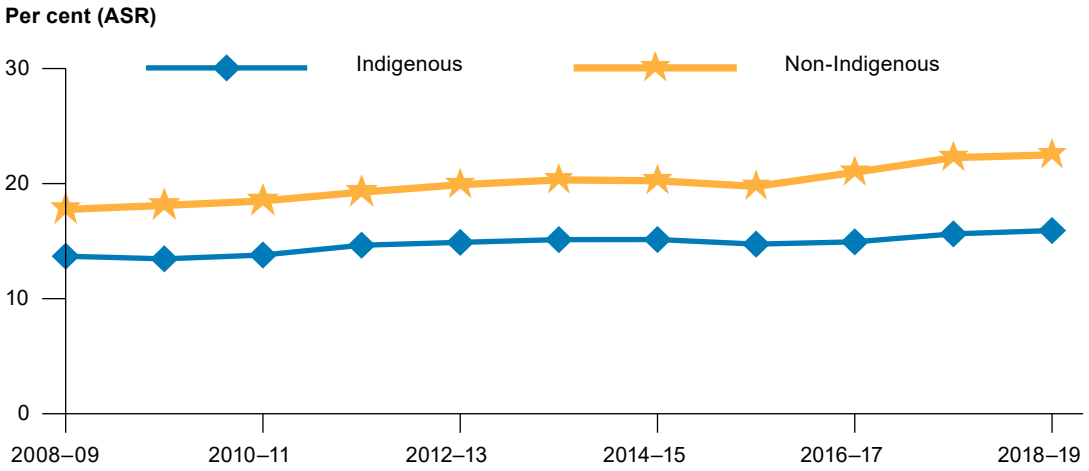
Source: AIHW analysis of MBS data.

Eye examinations

In 2018–19, 13% of Indigenous Australians had an eye examination by an optometrist or ophthalmologist in the previous 12 months (based on MBS claims) (100,700 people).

The age-standardised proportion of Indigenous Australians who had an eye examination increased from 14% in 2008–09 to 16% in 2018–19 (Figure 3.4). Over the same period, the age-standardised proportion of non-Indigenous Australians who had an eye examination increased from 17% to 22%.

Figure 3.4: Trends in eye examinations, by Indigenous status, 2008–09 to 2018–19



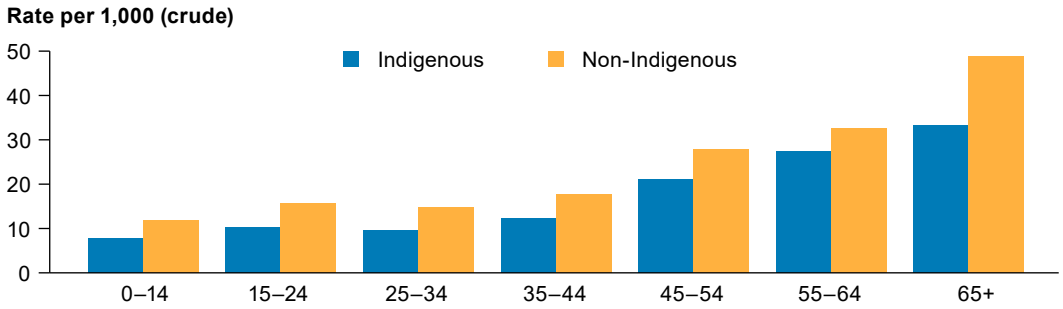
Notes

1. ASR refers to the age-standardised rate.
2. People who had an eye examination are those who made a claim for MBS items 10900, 10910–10916, 11215 or 11218 within the financial year. MBS data presented by Indigenous status have been adjusted for under-identification in the Medicare Voluntary Indigenous Identifier database.
3. Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

In 2018–19, Indigenous Australians had lower rates of eye examinations by an optometrist or ophthalmologist than non-Indigenous Australians across all age groups. Rates of eye examinations remained fairly stable at younger ages from 0–14 up to 35–44, then increased with age from 45–54 (Figure 3.5). Rates were highest for those aged 65 and over.

Figure 3.5 Rate of eye examinations, by Indigenous status and age, 2018–19



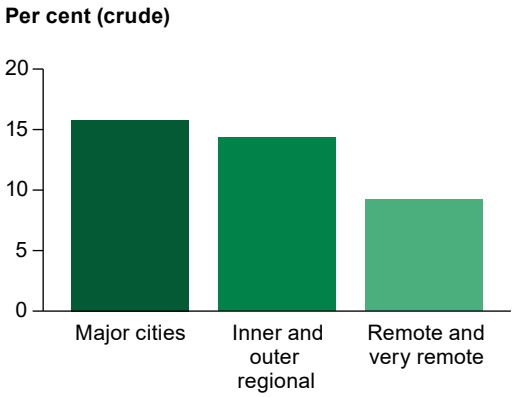
Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

Among Indigenous Australians:

- the proportion of Indigenous Australians who had an eye examination decreased with remoteness (Figure 3.6).
- rates of eye examinations by an optometrist or ophthalmologist were highest in Tasmania and the ACT (both around 17%) and lowest in Western Australia (9%) (Figure 3.7).

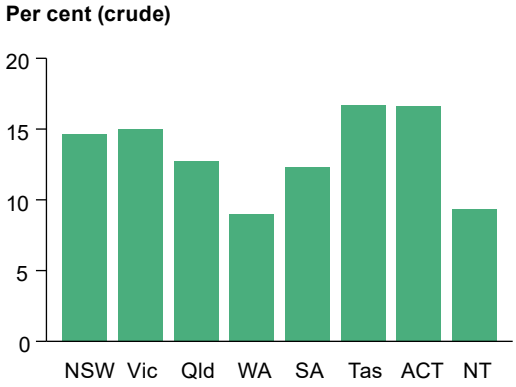
Figure 3.6: Proportion of Indigenous Australians who had an eye examination, by remoteness area, 2018–19



Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

Figure 3.7: Proportion of Indigenous Australians who had an eye examination, by state and territory, 2018–19



Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

4

How are eye health problems treated?

Most of the blindness and vision impairment experienced by Indigenous Australians is caused by conditions that are preventable or amenable to treatment—that is, refractive error, cataract and diabetic retinopathy.

Different eye problems require different treatments. For example, surgery can remove cataracts while visual aids, such as glasses and contact lenses can correct refractive error. These are 2 relatively low-cost, effective treatments for the main causes of vision loss among Indigenous Australians (Foreman et al. 2016).

This section includes data from the National Hospital Morbidity Database on hospitalisations for eye diseases and injuries, and for cataract surgery. Information on subsidised glasses comes from state or territory government data or their partner organisations.

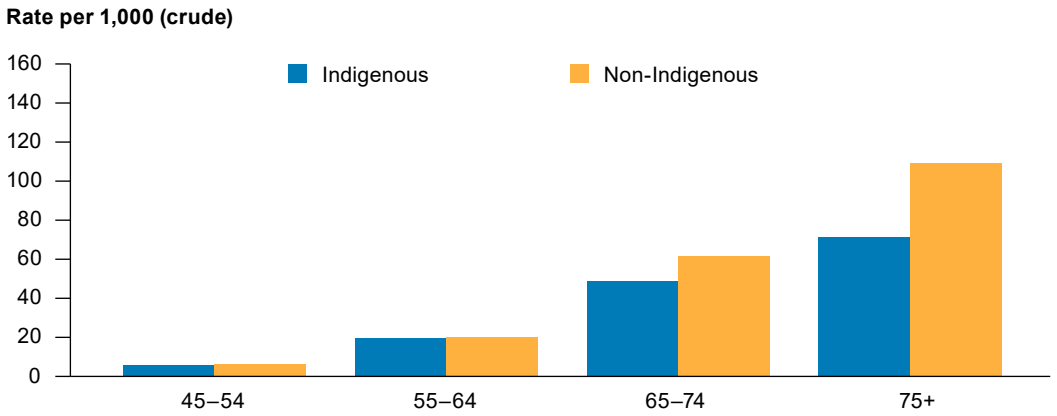
Hospitalisations for eye diseases

In the 2-year period 2016–18, there were around 8,600 hospitalisations of Aboriginal and Torres Strait Islander people for eye diseases (5.3 hospitalisations per 1,000 population). For Indigenous Australians, the most common principal diagnosis for eye diseases was disorders of the lens (5,350 hospitalisations or 3.3 per 1,000 population), followed by disorders of the choroid and retina (0.6 per 1,000) and disorders of the eyelid, lacrimal system and orbit (0.4 per 1,000).

Between 2008–10 and 2016–18, the age standardised hospitalisation rate for eye diseases among Indigenous Australians roughly doubled from 5.2 to 11 per 1,000, while the rate for non-Indigenous Australians rose from 11 to 14 per 1,000.

Hospitalisation rates for eye diseases increased with age. In 2016–18, rates were highest for people aged 75 and over for both Indigenous Australians (72 per 1,000) and non-Indigenous Australians (109 per 1,000) (Figure 4.1).

Figure 4.1: Hospitalisation rates for diseases of the eye, by Indigenous status and age, 2016–18

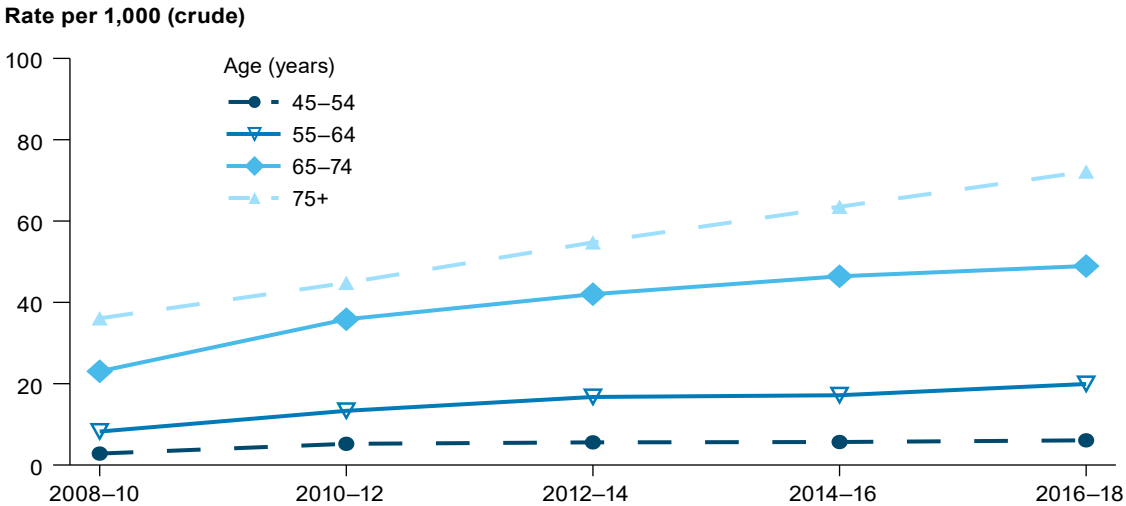


Note: Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

Hospitalisation rates of Indigenous Australians aged 45 and over more than doubled in all age groups between 2008–10 and 2016–18 for eye diseases (Figure 4.2). For Indigenous Australians aged 75 and over, hospitalisation rates rose from 36 to 72 per 1,000 over this period.

Figure 4.2: Hospitalisation rates for diseases of the eye, Indigenous Australians, by age group, 2008–10 to 2016–18



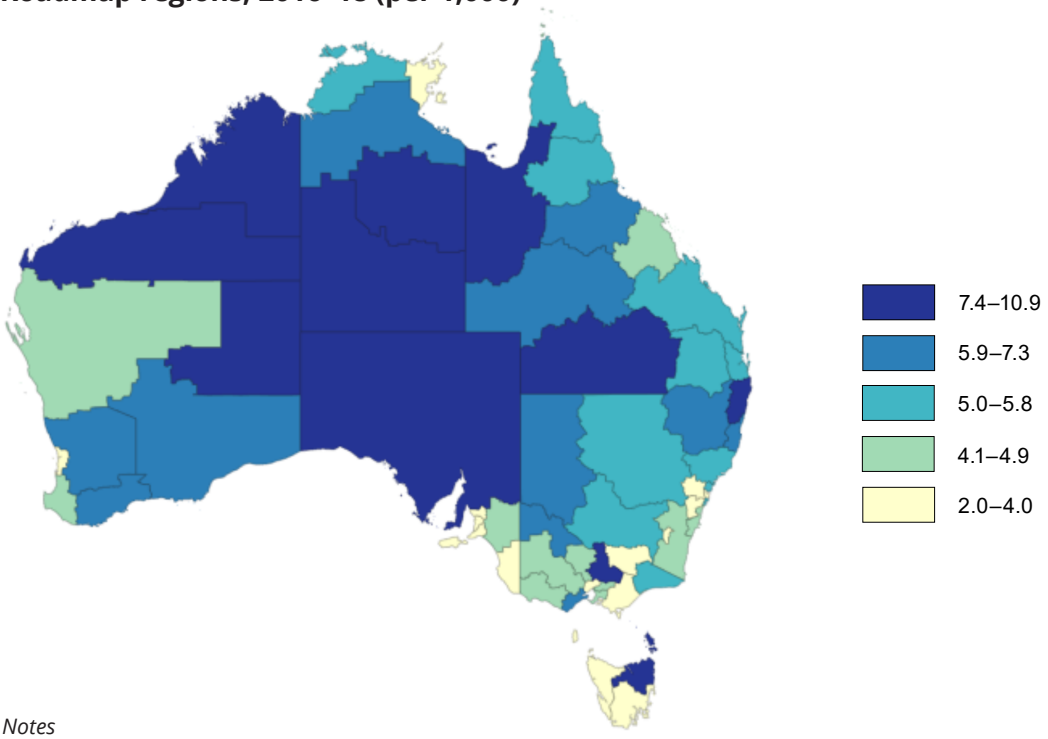
Notes

1. Data are for NSW, Vic, Qld, WA, SA and the NT combined.
2. Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

In 2016–18, hospitalisation rates for eye diseases by Roadmap regions (see Box 3.1) were highest in *West Queensland—South*, followed by *West Queensland—North* and *Pilbara* (Western Australia). Rates were lowest in *South and East Region* (South Australia) followed by *Western Sydney* (New South Wales) and *Barossa Hill Fleurieu* (South Australia) (Figure 4.3).

Figure 4.3: Hospitalisation rates for eye diseases, Indigenous Australians, by Roadmap regions, 2016–18 (per 1,000)



Notes

1. Four South Australian Roadmap regions have been combined for reporting purposes: *APY Lands*, *Country Eyre and Far North*, *Country Flinders and Upper North*, *Yorke and North Region*.
2. Data for this figure are available in the supplementary tables.

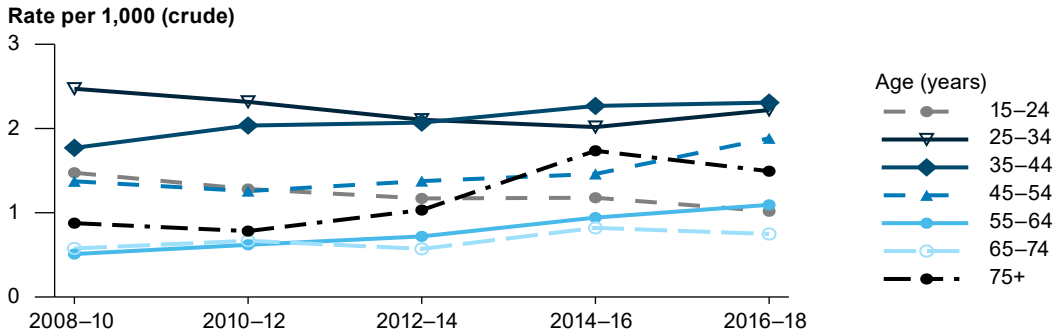
Source: AIHW National Hospital Morbidity Database.

Hospitalisations for eye injuries

In the 2-year period 2016–18, there were about 2,000 hospitalisations of Indigenous Australians for eye injuries (1.3 hospitalisations per 1,000 population). The most common principal diagnosis was an open wound of the eyelid and periocular area (about 720 hospitalisations or 0.4 per 1,000). The next most common principal diagnoses were periorbital fracture (0.3 per 1,000) and superficial injuries of eyelid and periocular area (0.2 per 1,000).

Between 2008–10 and 2016–18, the age-standardised hospitalisation rate for eye injuries was fairly constant for both Indigenous Australians (from 1.3 to 1.4 per 1,000) and non-Indigenous Australians (from 0.5 to 0.4 per 1,000). Over the same period, age-specific hospitalisation rates for eye injuries declined for younger Indigenous Australians aged 15–34, and increased for Indigenous Australians aged 35 and over (Figure 4.4).

Figure 4.4: Hospitalisation rates for eye injuries, Indigenous Australians, by age group, 2008–10 to 2016–18



Notes

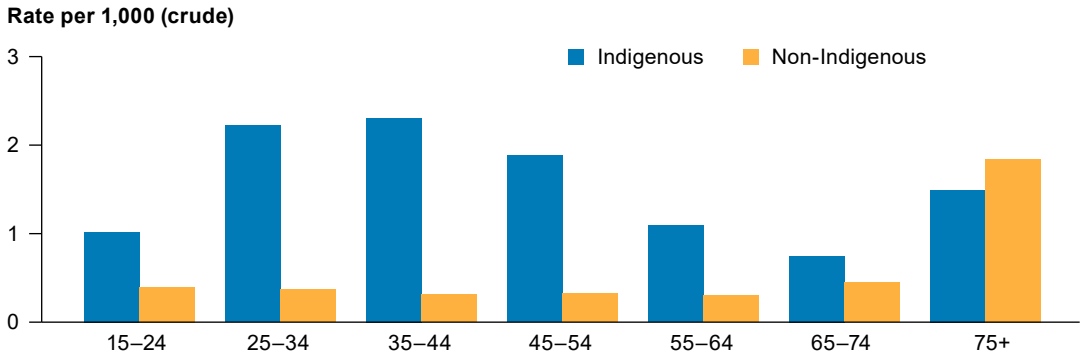
1. Data are for NSW, Vic, Qld, WA, SA and the NT combined.
2. Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

In 2016–18, the hospitalisation rates of Indigenous Australians for eye injuries were highest for those aged 35–44. For non-Indigenous Australians rates were highest for those aged 75 and over (Figure 4.5).

The hospitalisation rate for eye injuries for Indigenous Australians aged 35–44 was more than 7 times the rate for non-Indigenous Australians in this age group (2.3 per 1,000 and 0.3 per 1,000 respectively).

Figure 4.5: Hospitalisation rates for eye injuries, by Indigenous status and age group, 2016–18

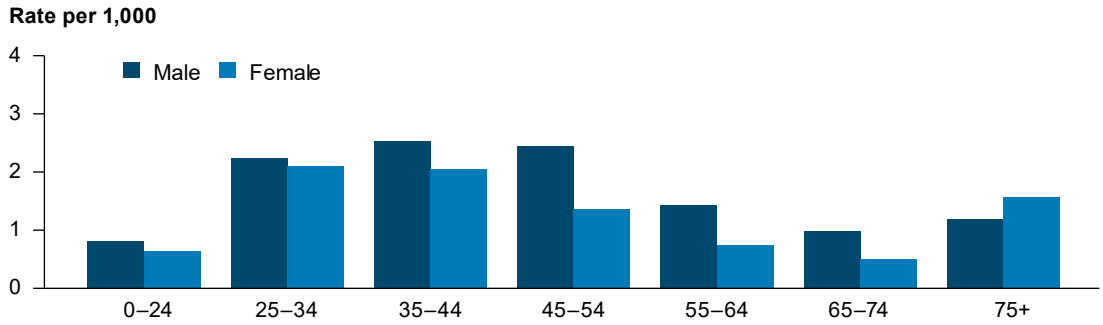


Note: Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

For Indigenous Australians, the rates for eye injuries for males were higher than those for females in all age groups except the oldest age group (75 years and over) (Figure 4.6).

Figure 4.6: Hospitalisation rates for eye injuries, Indigenous Australians, by sex and age group, 2016–18

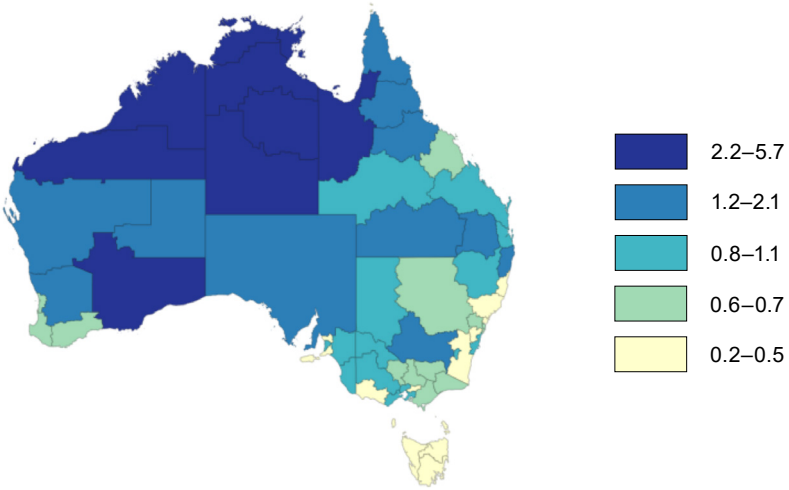


Note: Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

In 2016–18, hospitalisation rates for eye injuries by Roadmap regions were highest in *Barkly* (Northern Territory), followed by *Central Northern Territory* and *West Queensland North*. Rates were lowest in *East Melbourne* followed by *Hunter* (New South Wales) and *Great South Coast* (Victoria) (Figure 4.7).

Figure 4.7: Hospitalisation rates for eye injuries, Indigenous Australians, by Roadmap regions, 2016–18 (per 1,000)



Notes

1. Four South Australian Roadmap regions have been combined for reporting purposes (*APY Lands*, *Country Eyre and Far North*, *Country Flinders and Upper North*, *Yorke and North Region*).
2. Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

Cataract surgery

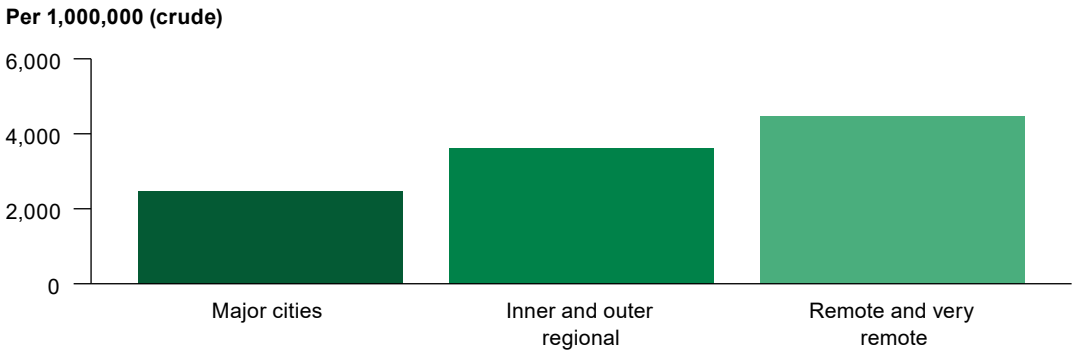
In the 2-year period 2016–18, there were around 8,300 hospitalisations of Indigenous Australians for eye procedures. The most common procedure was cataract surgery, with around 5,500 hospitalisations among Indigenous Australians for cataract surgery (or around 3,400 hospitalisations per 1,000,000 population). A number of factors may affect Indigenous Australian's access to cataract surgery (see Box 4.1)

Hospitalisation rates for cataract surgery among Indigenous Australians were highest in *Remote and very remote* areas combined (around 4,500 per 1,000,000) and lowest in *Major cities* (around 2,500 per 1,000,000) (Figure 4.8).

Box 4.1 Barriers to accessing cataract surgery

A 2013 report identified several barriers in the Australian health system that limit access to cataract surgery for Indigenous Australians. These included long waiting times, cost of surgery and the complexity of the steps involved in treatment. Strategies suggested to overcome these barriers focused on a system-wide approach to increase both provision and use of services. For further details, see Boudville et al. 2013.

Figure 4.8: Hospitalisation rates for cataract surgery, Indigenous Australians, by remoteness area, 2016–18

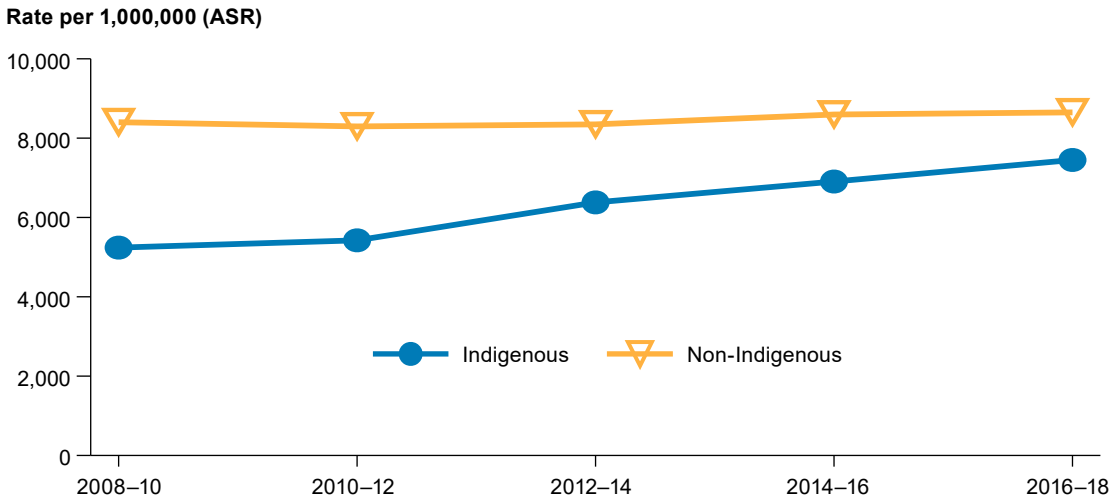


Note: Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

Age-standardised cataract surgery rates for Indigenous Australians rose from around 5,200 to around 7,400 per 1,000,000 between 2008–10 and 2016–18 (Figure 4.9). For non-Indigenous Australians, the age-standardised rate was fairly consistent, ranging between 8,300 and 8,600 hospitalisations per 1,000,000 over this period.

Figure 4.9: Trends in cataract surgery rates, by Indigenous status, 2008–10 to 2016–18



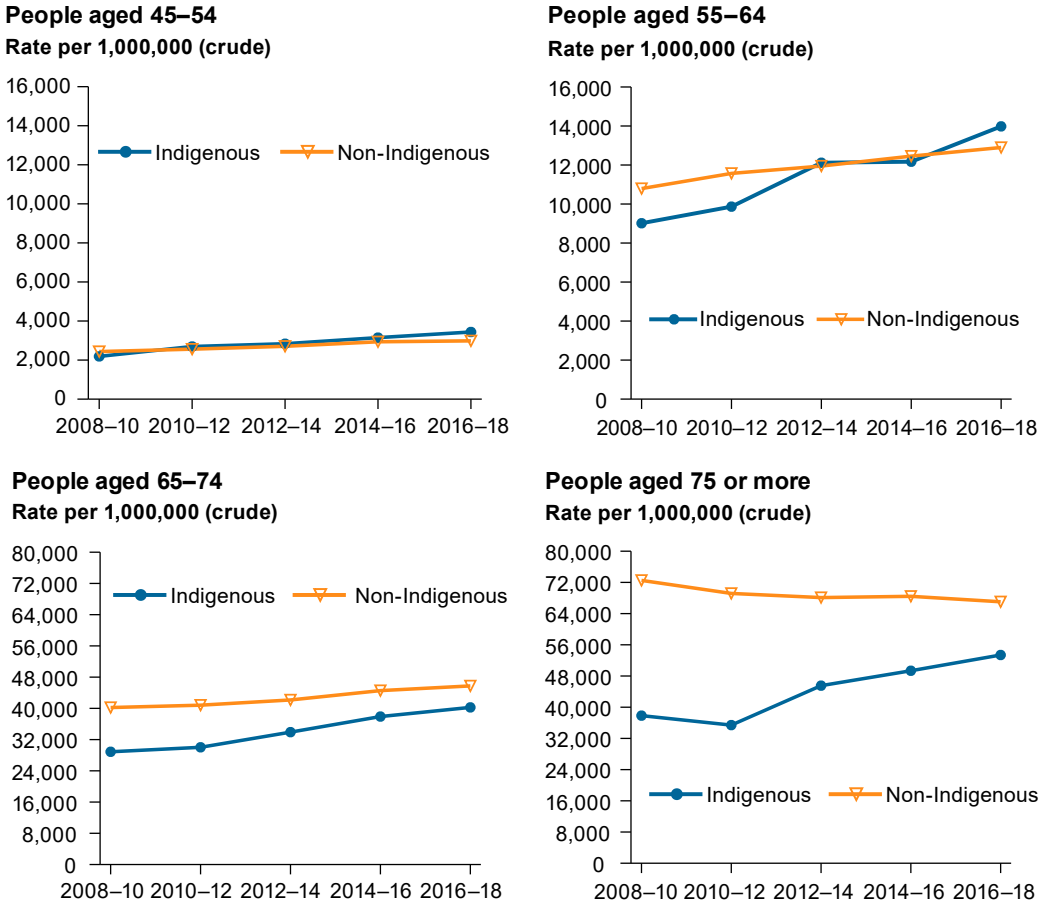
Notes

1. ASR refers to the age-standardised rate.
2. Data are for NSW, Vic, Qld, WA, SA and the NT combined.
3. Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

From 2008–10 to 2016–18, age-specific cataract surgery rates for Indigenous Australians increased for all age groups over 45 years (Figure 4.10). Over the same period, rates for non-Indigenous Australians remained relatively constant across these age groups. Cataract surgery rates were much higher for Indigenous and non-Indigenous Australians aged 65 and older.

Figure 4.10: Trends in hospitalisation rates for cataract surgery, by Indigenous status and age, 2008–10 and 2016–18



Notes

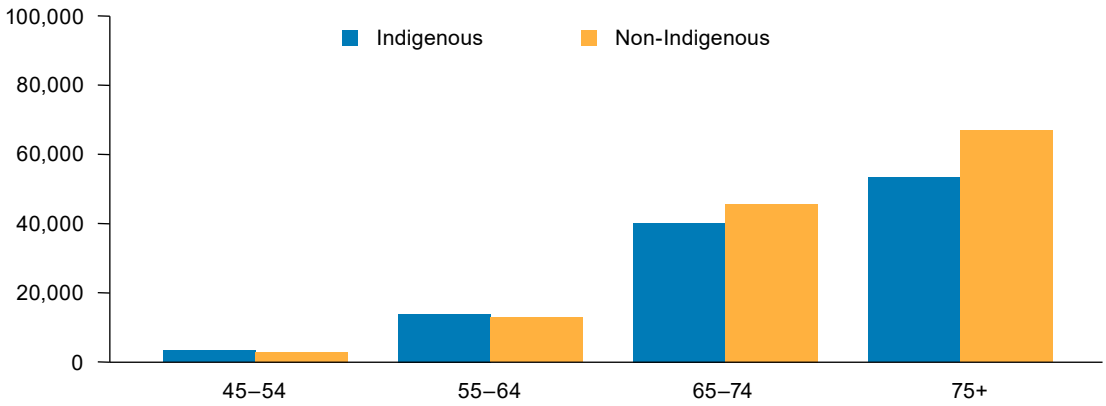
1. Data are for NSW, Vic, Qld, WA, SA and the NT combined.
2. Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

In 2016–18, age-specific cataract surgery rates for those aged 45–54 and 55–64 were slightly higher for Indigenous Australians than for non-Indigenous Australians (Figure 4.11). However, for older age groups, namely 65–74 years and 75 and over, rates were lower for Indigenous Australians than for non-Indigenous Australians.

Figure 4.11: Hospitalisation rates for cataract surgery, by Indigenous status and age group, 2016–18

Rate per 1,000,000 (crude)



Note: Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database.

In 2016-18, the number of hospitalisations for Indigenous Australians for cataract surgery was closest to meeting estimated need in the Roadmap region of *West Queensland South* (58 hospitalisations, with 94% of need met) (Figure 4.12, see Box 4.2 for information on the need calculations).

Box 4.2: Estimating population-based need for eye care services

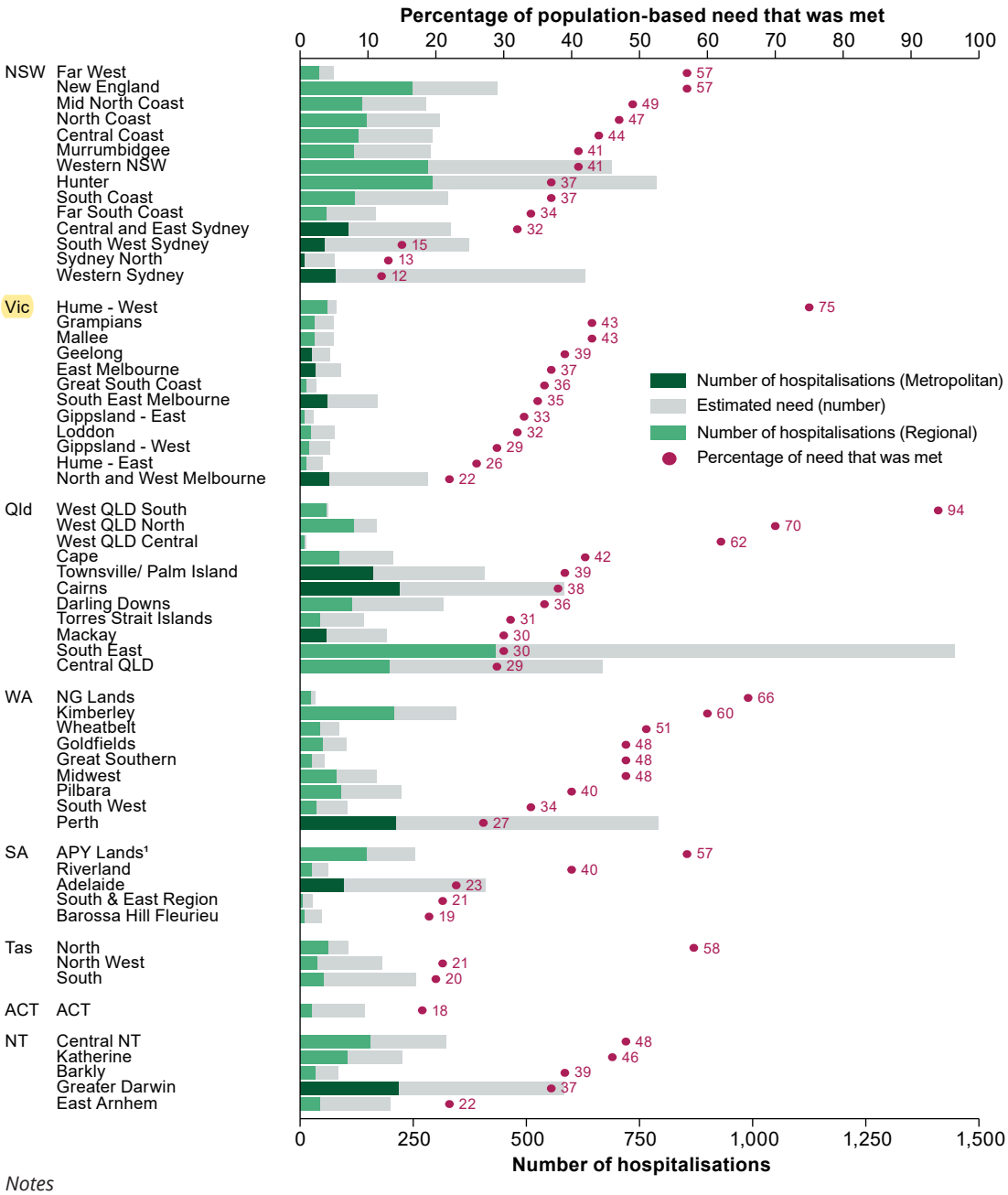
The Indigenous Eye Health Unit (IEHU) at the University of Melbourne developed a 'Calculator for the delivery and coordination of eye care services' (IEHU n.d.), based on the 2008 National Indigenous Eye Health Survey and models of service delivery developed in the Roadmap to Close the Gap for Vision (Taylor et al. 2012).

This calculator uses the Aboriginal and Torres Strait Islander population for a community or region to estimate the annual need for eye care services in that area. The calculator was used to estimate need for cataract surgery by Roadmap regions and spectacles by state.

Needs estimates are presented in this report as:

- Estimated number of services needed in the area.
- Percentage of need met— the number of services provided, divided by the estimated need for services multiplied by 100.

Figure 4.12: Number of hospitalisations and estimated population-based need for cataract surgery, Indigenous Australians, by Roadmap regions, 2016–18



Notes

1. Four South Australian Roadmap regions have been combined for reporting purposes (labelled as 'APY Lands'): *APY Lands*, *Country Eyre and Far North*, *Country Flinders and Upper North*, *Yorke and North Region*.
2. South Coast region includes Jervis Bay territory.
3. Data for this figure are available in the supplementary tables.

Source: AIHW National Hospital Morbidity Database and AIHW analysis of Calculator for the delivery and coordination of eye care services (IEHU n.d.).

In 2017–18, Indigenous Australians waited longer for cataract surgery (a median number of 132 days) than non-Indigenous Australians (84 days).

Similar proportions of Indigenous and non-Indigenous Australians were treated within 365 days for cataract surgery (around 98%).

Subsidised spectacles

The provision of spectacles is a low-cost, effective treatment for refractive error, the main cause of vision loss for Indigenous Australians.

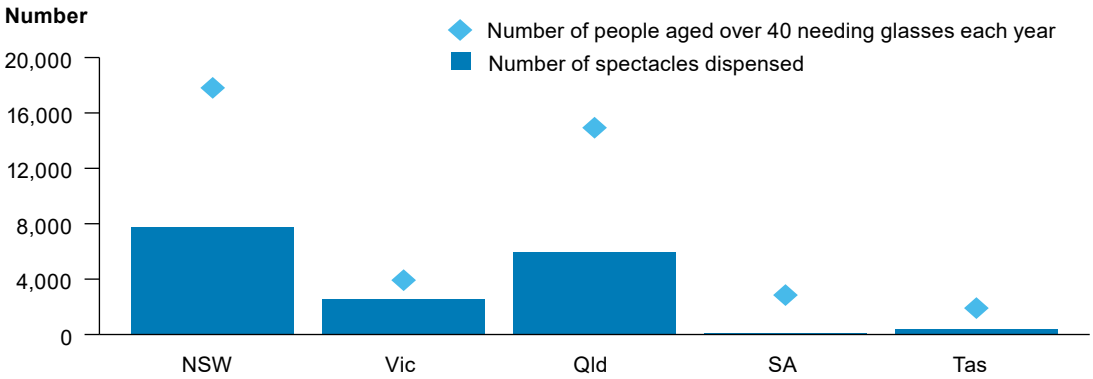
All state and territory governments have schemes that provide eye care and visual aids, including spectacles, to eligible people at low or no cost. Only 5 states could provide data on the number of spectacles dispensed to Indigenous Australians.

In 2018–19, the number of spectacles dispensed to Indigenous Australians under state schemes was:

- 7,746 in New South Wales (28 per 1,000 Indigenous population)
- 5,954 in Queensland (26 per 1,000)
- 2,589 in Victoria (42 per 1,000)
- 101 in South Australia (2 per 1,000)
- 390 in Tasmania (13 per 1,000) (Figure 4.13).

The number of spectacles dispensed in Victoria was closest to meeting the estimated number of Indigenous Australians aged over 40 who needed them—with an estimated 66% having their needs met (see Box 4.2 for information on the need calculations).

Figure 4.13: Number of spectacles dispensed to Indigenous Australians and estimated population-based need, 2018–19



Note: Data for this figure, are available in the supplementary tables.

Source: AIHW analysis of NSW Department of Family and Community Services data (unpublished); Australian College of Optometry Victorian data (unpublished); Queensland Health data (unpublished); SA Department of Human Services (unpublished); Tasmanian Health Service data (unpublished) and Calculator for the delivery and coordination of eye care services (IEHU n.d.).

Patient eligibility, subsidy size, product coverage and the role of the optometrist in supporting patient access to the subsidised spectacles scheme, differs across states and territories. This contributes to jurisdictional differences between the number of spectacles dispensed and estimated need. Both New South Wales and South Australia have recently announced enhancements to their schemes. For example, New South Wales has improved the application and assessment process to streamline applications and product delivery for optometrists and reduce waiting times for the delivery of glasses.

Partnerships to distribute spectacles

A number of organisations partner with government to provide eye health services throughout Australia including the Australian College of Optometry (ACO) and Lion's Outback Vision.

Victorian Aboriginal Spectacles Subsidy Scheme

The Victorian Aboriginal Spectacles Subsidy Scheme (VASSS), a Victorian Government initiative introduced in 2010, is an additional subsidy of the state-wide Victorian Eyecare Service managed by the ACO (ACO 2017). The ACO is a member-based organisation that provides public optometry services in Victoria, and more recently South Australia. It also undertakes clinical education and research.

Supported by the Australian Government's Visiting Optometrists Scheme, the ACO provides eye care to over 20 Aboriginal Community Controlled Health Services in Victoria, supporting delivery of the VASSS through these clinics and a network of 45 private providers. The VASSS is available for all Aboriginal and Torres Strait Islander Victorians with a low cost patient contribution of $10 and a choice of frames approved by community Elders (ACO 2020).

Over 20,000 spectacles have been provided through the VASSS in a decade of operation (data provided by the ACO). In 2019, the ACO provided 2,551 consultations for Indigenous patients and 2,796 spectacles; 1,150 in Melbourne and 1,646 in country Victoria.

Lions Outback Vision

Lions Outback Vision, based at the Lions Eye Institute in Western Australia, provides specialist eye health care to regional and remote Indigenous communities in Western Australia, as well as in urban Indigenous services.

In 2019, as part of the Visiting Optometrist Scheme, Lion's Outback Vision provided 2,528 consultations across Kimberley, Pilbara, Goldfields and Perth Metro—91% of which were for Indigenous Australians (analysis based on Lion's Outback Vision activity data).

Overall, in 2019, Lion's Outback Vision dispensed 1,955 spectacles: 1,163 in *Kimberley*, 638 in *Pilbara*, 120 in *Goldfields* and 34 in *Perth Metro*.

Between 2017 and 2019, the number of spectacles dispensed by Lions Outback Vision increased from 1,241 to 1,955.

5

Spotlight on trachoma and trichiasis

Trachoma is an infectious disease of the eye that, left untreated, can result in scarring, inturned eyelashes (trichiasis) and blindness. Trachoma is highly infectious and easily spread. Antibiotics and environmental improvements are used to treat trachoma, while surgery is required to prevent blindness for people who have trichiasis.

Trachoma is not commonly found in high-income countries, but it is endemic in some remote Indigenous communities in Queensland, Western Australia, South Australia and the Northern Territory.

The Australian Government funds trachoma control, surveillance and reporting. National data on trachoma come from the Kirby Institute's Australian Trachoma Surveillance Reports.

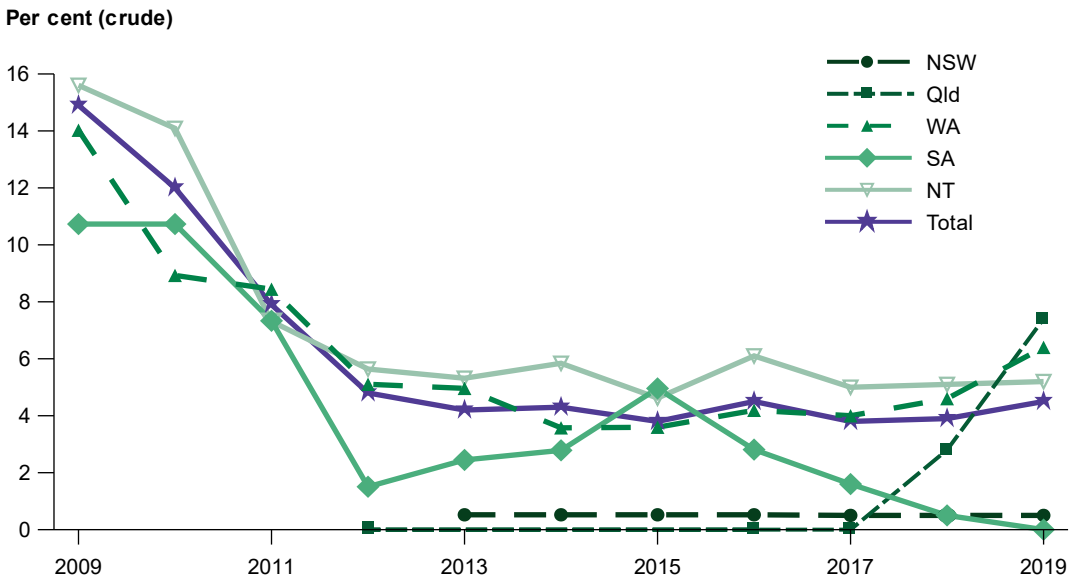
How common is trachoma?

In 2019, Public Health Units undertook trachoma screening among children in 113 at-risk communities across Queensland, Western Australia, South Australia and the Northern Territory.

While children between ages 0 and 14 were screened, those aged 5–9 are generally considered to be the focus group for trachoma screening. In 2019, 3,154 Indigenous children aged 5–9 were screened for trachoma in the 113 communities. Screening coverage was 92% for this group, above the recommended 85% for trachoma control.

The estimated prevalence of active trachoma among those aged 5–9 years in at-risk communities fell from 15% in 2009 to 4.8% in 2012 and has since plateaued at around 4.5% from 2013 to 2019 (Figure 5.1). These rates are prone to slight fluctuations due to small population sizes and a transient population.

Figure 5.1: Trends in trachoma prevalence among Indigenous children aged 5–9, by state and territory, 2009 to 2019



Note: Data for this figure are available in the supplementary tables.

Source: Australian Trachoma Surveillance Reports (Kirby Institute 2013–2019, forthcoming 2020).

Treatment for trachoma

Individuals identified with active trachoma require treatment together with their household contacts. In some communities the whole community will also require treatment (see also Box 5.1).

In 2019, the overall treatment coverage of active trachoma cases was 89% and involved treatment of children with active trachoma, their household contacts and other people in the community (4,711 of 5,294 people).

Box 5.1: Recommendations for trachoma control

The World Health Organization recommends following the 'SAFE' strategy to control trachoma. This approach recommends:

- **s**urgery—to prevent trichiasis–related blindness
- **a**ntibiotics—to clear infection
- **f**acial cleanliness—to promote clean faces and reduce spread
- **e**nvironment—measures to improve access to water, good sanitation, waste and fly control and reduce overcrowding

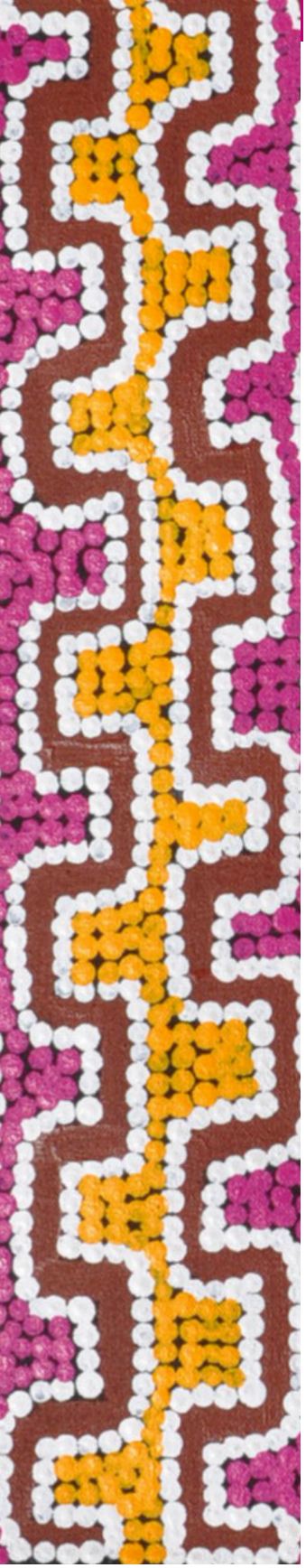
Trachoma-related trichiasis

Screening for trichiasis is undertaken through a range of strategies, including during adult health checks.

In 2019, screening data were reported for 127 at-risk communities:

- just under 7,000 Indigenous Australians aged 15–39, and just over 6,000 aged 40 and over, were screened for trichiasis.
- 11 cases of trichiasis were identified—2 among those aged 15–39 and 9 among those aged 40 and over.

Surgery for trachoma-related trichiasis in the past 12 months was reported to have been undertaken for 6 people in 2019.



6

Spotlight on diabetic retinopathy

Diabetic retinopathy is a complication of diabetes that causes damage to blood vessels in the eye.

Accessing treatment for diabetic retinopathy involves complex clinical pathways and a series of visits to different providers (Taylor et al. 2012).

Data on the prevalence of diabetic retinopathy comes from the National Eye Health Survey 2016, while data on screening and treatment are from the MBS.

Indigenous Australians can voluntarily choose to identify as being of Aboriginal and or Torres Strait Islander descent to Medicare, Services Australia. This information is recorded on the Medicare database through the Voluntary Indigenous Identifier (VII). As not all Indigenous Australians choose to identify themselves in this way, in this chapter the MBS data on treatment and screening of diabetic retinopathy, based on the VII, have been adjusted to reflect the size of the Indigenous Australian population.

How common is diabetic retinopathy?

According to the 2016 National Eye Health Survey, diabetic retinopathy is the third most common cause of vision loss among Indigenous Australians (after refractive error and cataract).

Among Indigenous Australians aged 40 and over in 2016, 5.2% of vision loss was attributable to diabetic retinopathy. Among non-Indigenous Australians, diabetic retinopathy accounted for 1.4% of vision loss.

The proportion of vision impairment attributed to diabetic retinopathy among Indigenous Australians was slightly higher among men (5.3%) than women (4.8%).

Did you know?

- The longer a person has diabetes, the higher their risk of diabetic retinopathy.
- In 2018–19, an estimated 8.2% of Indigenous Australians had diabetes or high sugar levels. When data are age-standardised, 13% of Indigenous Australians and 4.7% of non-Indigenous Australians had diabetes.

Screening for diabetic retinopathy

Early detection and timely treatment of retinopathy can prevent vision loss and blindness from diabetic retinopathy. The Optometry Australia (2018) clinical guideline recommends eye examinations including screening for diabetic retinopathy:

- annually for all Indigenous Australians with diabetes
- annually for non-Indigenous Australians with diabetes who are considered to be at higher risk of vision loss and diabetic retinopathy due to risk factors including longer duration of diabetes, poor glycaemic control, hypertension or blood lipid control.
- at least every 2 years for non-Indigenous Australians with diabetes and no other additional risk factors for diabetic retinopathy.

Eye examinations including screening for diabetic retinopathy can be performed by:

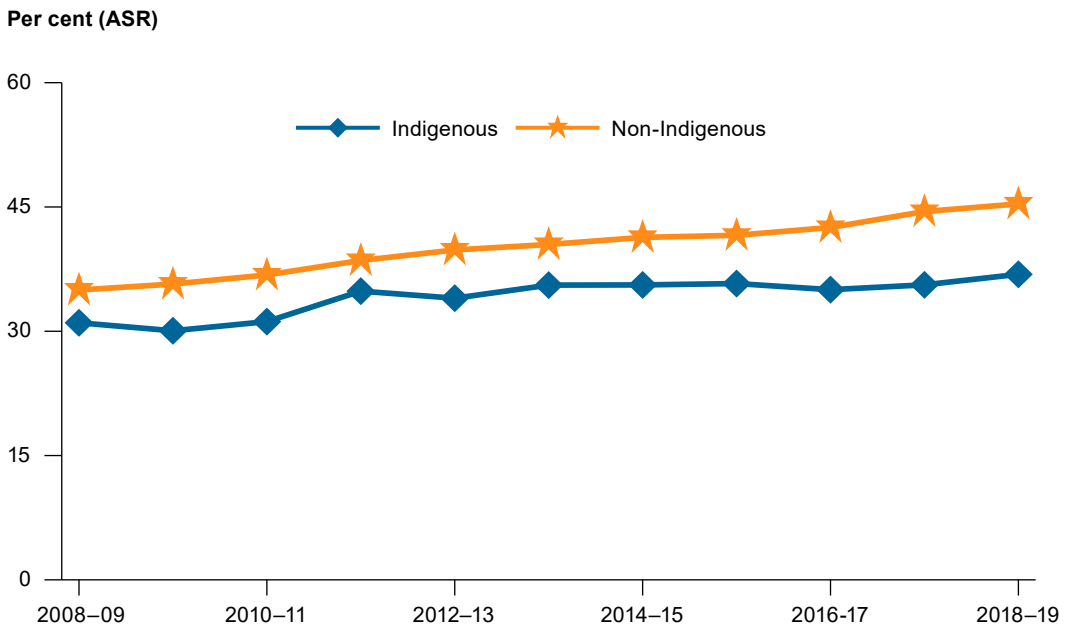
- optometrists (MBS group A10, excluding items 10921–10930)
- ophthalmologists (MBS group D1. Subgroup 2. Ophthalmology).
- GPs. Since November 2016, two MBS items are available for GPs to test for diabetic retinopathy through retinal photography. The item available to Indigenous Australians

(12325) can be claimed annually, and the item available for all Australians (12326) can be claimed every second year. If retinopathy is suspected or identified, patients are referred to an optometrist or ophthalmologist.

According to MBS data, in 2018–19, about 31,400 Indigenous Australians had an HbA1c measurement result recorded within the previous 2 years—referred to as a diabetes test in this report (see also Box 6.1). Of these, about 14,000 (44%) had an eye examination by a GP, optometrist or ophthalmologist in 2018–19.

Among Indigenous Australians who had a diabetes test, the age-standardised proportion who had an eye examination rose from around 31% in 2008–09 to around 34% in 2012–13 then plateaued at around 36% from 2013–14 to 2018–19. The proportion of non-Indigenous Australians with a diabetes test in the past 2 years who had an eye examination rose from around 35% to 45% from 2008–09 to 2018–19 (Figure 6.1).

Figure 6.1: Proportion who had a diabetes test who also had an eye examination, by Indigenous status, 2008–09 to 2018–19



Notes

1. ASR refers to the age-standardised rate.
2. Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

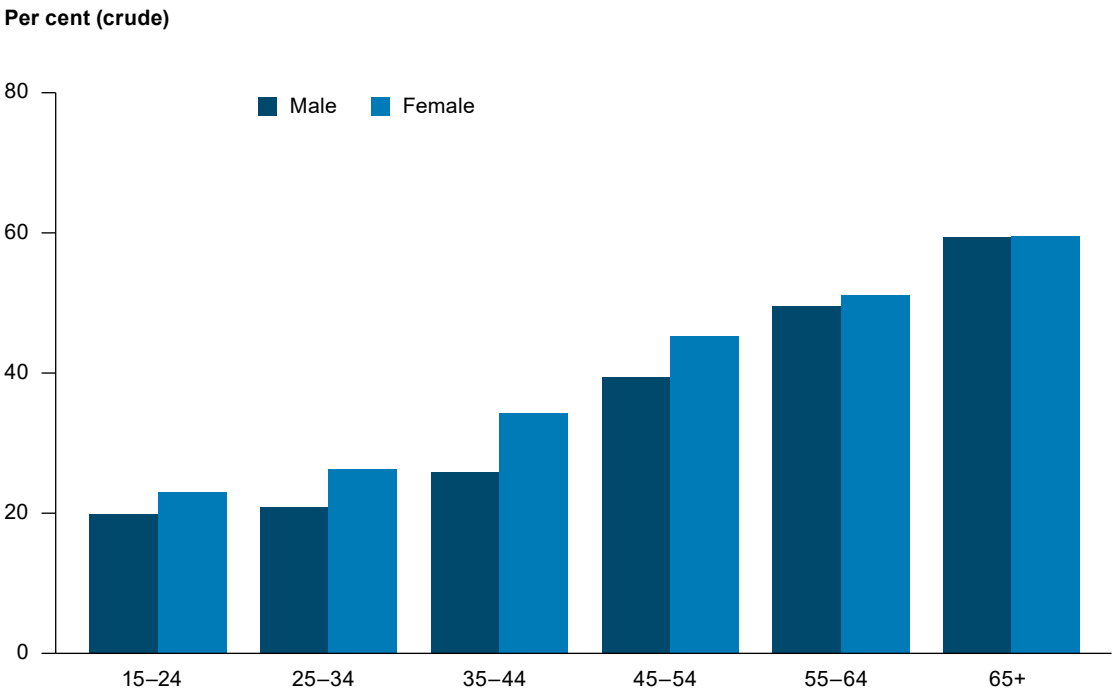
Box 6.1: What is HbA1c and why is it important?

The (glycosylated haemoglobin or glycated haemoglobin) blood test indicates whether blood glucose levels have been higher than normal over the preceding 6–8 weeks by looking at how much sugar (glucose) is bound in red blood cells. It is regarded as the gold standard for assessing glycaemic control.

People who have diabetes need this test regularly to see if their levels are staying within range and whether they need to adjust their diabetes management. The general glycated haemoglobin (HbA1c) target for people with type 2 diabetes is ≤53 mmol/mol (≤7%) (RACGP 2016).

In 2018–19, the proportion of Indigenous Australians who had a diabetes test who were screened for diabetic retinopathy increased with age for both males and females, rising from around 20% for males and 23% for females aged 15–24 to nearly 60% for males and females aged 65 and over (Figure 6.2).

Figure 6.2: Proportion of Indigenous Australians who had a diabetes test who were screened for diabetic retinopathy, by age group and sex, 2018–19



Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of MBS data.

Screening for diabetic retinopathy is supported by funding from the Australian Government for the purchase of retinal cameras, along with training and support for eligible Aboriginal Medical Services and other health services in priority areas with large numbers of Indigenous Australian patients, with a focus on rural and remote locations (Optometry Australia 2019).

Treatment for diabetic retinopathy

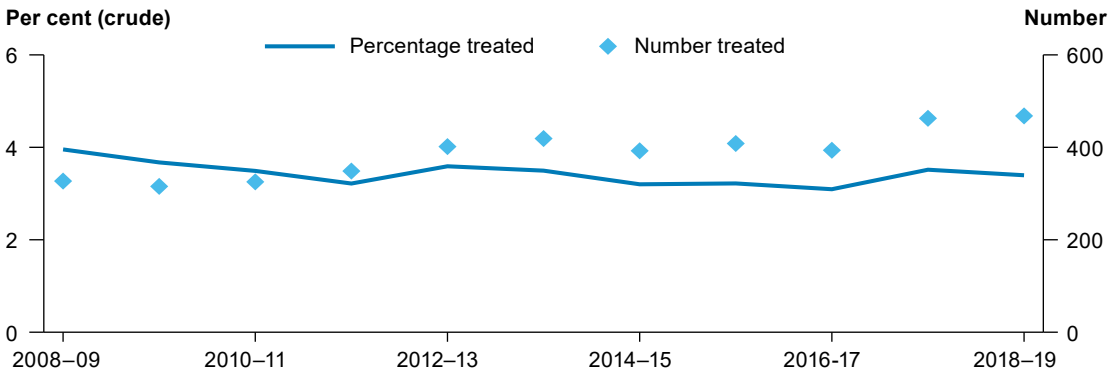
Close control of blood sugar levels and blood pressure can help to reduce the risk of developing diabetic retinopathy and help to slow its progression; however, in some cases further treatment is necessary to slow progression and prevent further vision loss. Treatment generally involves injections into the eye, or laser therapy.

In 2018–19, around 470 Indigenous Australians had treatment for diabetic retinopathy—3.4% of those screened (about 13,800).

In 2018–19, the age-standardised rate of treatment among those who were screened was similar for Indigenous and non-Indigenous Australians (2.8% and 2.7% respectively).

Between 2008–09 and 2018–19, the number of Indigenous Australians screened for diabetic retinopathy who underwent treatment increased by 43% (from around 330 to 470). However, the crude percentage of Indigenous Australians screened for diabetic retinopathy who underwent treatment fell over the same time period (from 4.0% to 3.4%) (Figure 6.3). This decrease was influenced by the relatively large rise in the number of Australians screened for diabetic retinopathy (67%) between 2008–09 and 2018–19 (from around 8,300 to around 13,800).

Figure 6.3: Proportion of Indigenous Australians who were screened for diabetic retinopathy who underwent treatment, 2008–09 to 2018–19



Note: Data for this figure are available in the supplementary tables.
Source: AIHW analysis of MBS data.

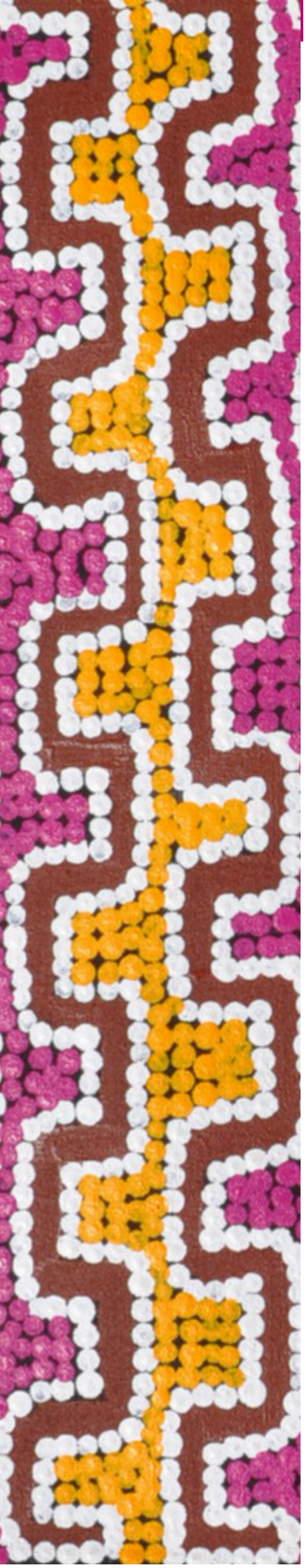
People living in regional and remote areas often need to travel further to access treatment for diabetic retinopathy. Outreach services, such as Lion's Outback Vision in Western Australia, can help to meet this need. See Box 6.2 for data on treatment for diabetic retinopathy provided by Lion's Outback Vision.

Box 6.2: Lion's Outback Vision—Intravitreal injections in regional and remote Western Australia

One way to treat diabetic retinopathy is through intravitreal injections (injections directly into the eye) of treatment drugs.

Lions Outback Vision is an organisation that provides specialist eye health care to regional and remote Indigenous communities in Western Australia. In 2018, it provided 627 intravitreal injections to treat diabetic macular oedema (a form of diabetic retinopathy) the majority in the communities of Port Hedland (152), Albany (127), Karratha (75) and Derbarl Yerrigan (74).

Source: Analysis of Lion's Outback Vision activity data (2019 unpublished).



7

Eye health workforce and outreach programs

Indigenous eye health services and programs are provided through government, non-government and private institutions. They include a range of clinical settings, such as hospitals, GP clinics and Outreach services for remote communities (Razavi et al. 2018).

Optometrists and ophthalmologists are specialists in eye sight and eye health (see Box 7.1). They play an important role in Indigenous eye health.

Data on the size and location of the eye health workforce can indicate the availability of specialised services in different regions. Annual data on the number of registered optometrists and ophthalmologists are available from the National Health Workforce Data Set.

Box 7.1 Optometrists and ophthalmologists

Optometrists are eye care professionals who provide primary vision care and who perform eye examinations and vision tests to determine the presence of visual, eye and other abnormalities; eye diseases; and other bodily diseases that may affect the eye. They also prescribe lenses, other optical aids, therapy and medication to correct and manage vision problems and eye diseases.

Ophthalmologists are medical doctors who specialise in providing diagnostic, preventive and surgical treatment for diseases, injuries and deficiencies of the eye.

Optometrists

In 2018, 5,060 optometrists were employed in Australia, with a full-time equivalent (FTE) of 4,645 optometrists (19 FTE per 100,000; see Box 7.2). In 2011, there were 3,793 FTE optometrists (a rate of 17 FTE per 100,000).

The number and rate of optometrists were higher in metropolitan areas. Central and Eastern Sydney had the highest rate (473 FTE, or 29 per 100,000). The rate in the Northern Territory was relatively low. In 2018, there were only 35 FTE registered optometrists (14 FTE per 100,000) in the Northern Territory (Figure 7.1).

In 2018, fewer than 10 optometrists identified as Indigenous Australians.

Box 7.2: What is the full-time equivalent rate?

The Full-time equivalent (FTE) is a measure of the number of standard-hour workloads worked by employed health practitioners. It provides a useful measure of supply as it accounts for both the number of practitioners who are working and the hours that they work.

The FTE number is calculated based on the total hours worked in a "standard working week". The standard working week is assumed to be 38 hours, equivalent to 1 FTE, for all practitioners except for medical practitioners where it is assumed to be 40 hours.

The FTE per 100,000 (number of FTE practitioners per 100,000 population) is a measure of supply. By defining supply in terms of the FTE rate, meaningful comparisons of supply can be made across geographic areas and over time. The FTE rate is calculated as the number of FTE practitioners divided by the relevant population count, multiplied by 100,000.

Figure 7.1: Rates of optometrists, by PHN, 2018

Notes

1. Data are based on optometrists employed in Australia working in their registered profession. FTE calculations are based on a 38-hour work week. The rates in brackets beside the state/territory labels relate to the overall rate of FTE per 100,000 for that state/territory.
2. Rates have not been published where the number of optometrists was fewer than 10.
3. Hunter New England PHN includes Central Coast.
4. Data for this figure are available in the supplementary tables.

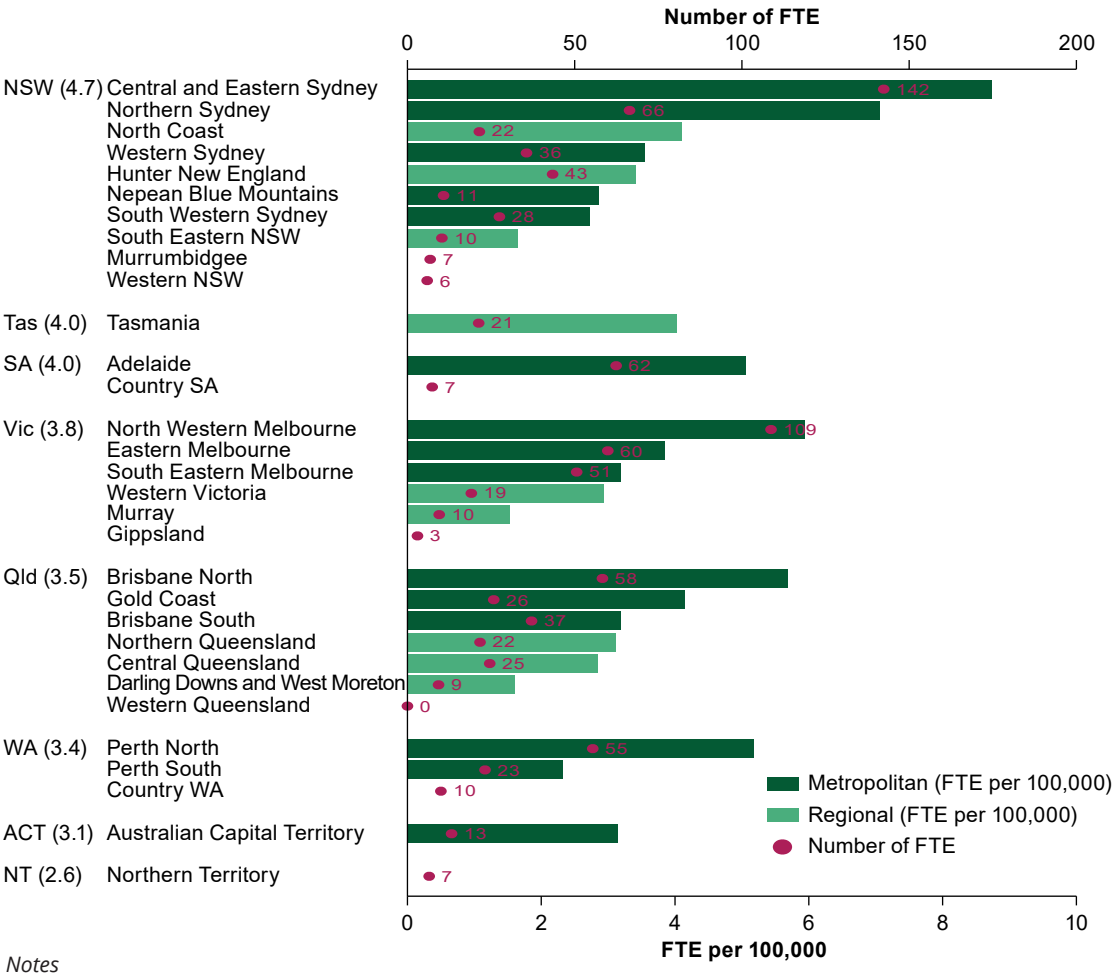
Source: AIHW analysis of National Health Workforce Data Set.

Ophthalmologists

The ophthalmologist workforce is smaller than the optometrist workforce, with 946 ophthalmologists employed in Australia (4 FTE per 100,000) in 2018.

Ophthalmologists were primarily located in metropolitan areas, with the highest rates in Central and Eastern Sydney (142 FTE, or 9 FTE per 100,000, see Figure 7.2). There were only 7 FTE ophthalmologists in the Northern Territory (Figure 7.2).

Figure 7.2: Rates of ophthalmologists, by PHN, 2018



Notes

1. Data are based on ophthamologists employed in Australia working in their registered profession. FTE calculations are based on a 40-hour work week. The rates in brackets beside the state/territory labels relate to the overall rate of FTE per 100,000 for that state/territory.
2. Rates have not been published where the number of ophthamologists was fewer than 10.
3. Hunter New England PHN includes Central Coast.
4. Data for this figure are available in the supplementary tables.

Source: AIHW analysis of National Health Workforce Dataset.

Indigenous-specific primary health care services

Indigenous Australians may access mainstream or Indigenous-specific primary health care services, which offer prevention, diagnosis and treatment in a range of settings. Indigenous specific services are available through community clinics, Aboriginal Community Controlled Health Organisations and other health care facilities. There are also Indigenous-specific services offered within some public hospitals in Australia.

The number of Indigenous-specific primary health care organisations that employ or had visiting optometrists or ophthalmologists has increased from 118 (58%) in 2013–14 to 137 (69%) in 2018–19 (AIHW Online Services Report database collection).

Outreach programs

The Australian Government outreach programs play an important role in eye health for Indigenous Australians. Outreach services are primarily provided in regional and remote areas where there are low numbers of registered optometrists and ophthalmologists. These services are intended to compensate for the uneven distribution of the health workforce and to improve access to health services across Australia. Several Australian Government outreach programs provide specialist eye health services (Box 7.3).

Box 7.3: Australian Government Outreach Programs to improve eye health of Indigenous Australians

The Visiting Optometrists Scheme (VOS) supports optometrists to deliver outreach services in *Remote* and *Very Remote* locations and in rural communities with an identified need for optometric services. From July 2015, new guidelines expanded the program to include urban locations for Indigenous Australian patients. Many of the services for Indigenous Australians are delivered by visiting optometrists in Aboriginal and Torres Strait Islander primary health-care organisations.

The Rural Health Outreach Fund (RHOF) supports the delivery of medical specialities, GPs and allied and other health outreach services in rural, regional and remote areas. These include eye health services.

The Medical Outreach Indigenous Chronic Disease Program (MOICDP) improves access to medical specialists, GPs, allied health and other health professionals for Indigenous Australians living with chronic disease. Eye health is 1 of the 4 main priorities of the RHOF—along with chronic disease management, maternity and paediatric health, and mental health. As part of this program, eye health services can be provided to those suffering from chronic conditions such as diabetes.

The Eye and Ear Surgical Support Services (EESS) program expedites access to surgery for Indigenous Australians who require eye surgery. The program facilitates a culturally safe surgical support pathway, access to hospital theatre time and access to bulk billing surgeons. The program also arranges travel and accommodation for the surgical patient and carer (where needed) (Note that the number of eye services provided by the EESS is not included in this report).

Services provided

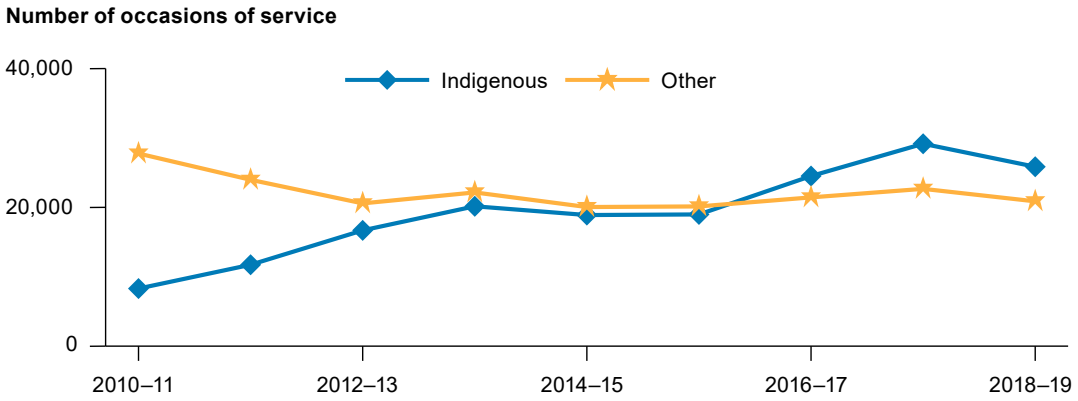
In 2018–19, the number of occasions of service delivered to Indigenous Australian patients by outreach programs for eye health was:

- 25,849 by the VOS
- 5,870 by the RHOF
- 3,484 by the MOICDP.

VOS occasions of service for Indigenous Australian patients more than tripled between 2010–11 and 2017–18, rising from 8,298 to 29,161 before falling in 2018–19 to 25,849 (Figure 7.3).

From 2016–17, services provided to Indigenous Australian patients have exceeded those provided to other Australian patients (that is, to those of non-Indigenous and unknown Indigenous status) (Figure 7.3).

Figure 7.3 Trends in VOS occasions of services, by Indigenous status, 2010–11 to 2018–19

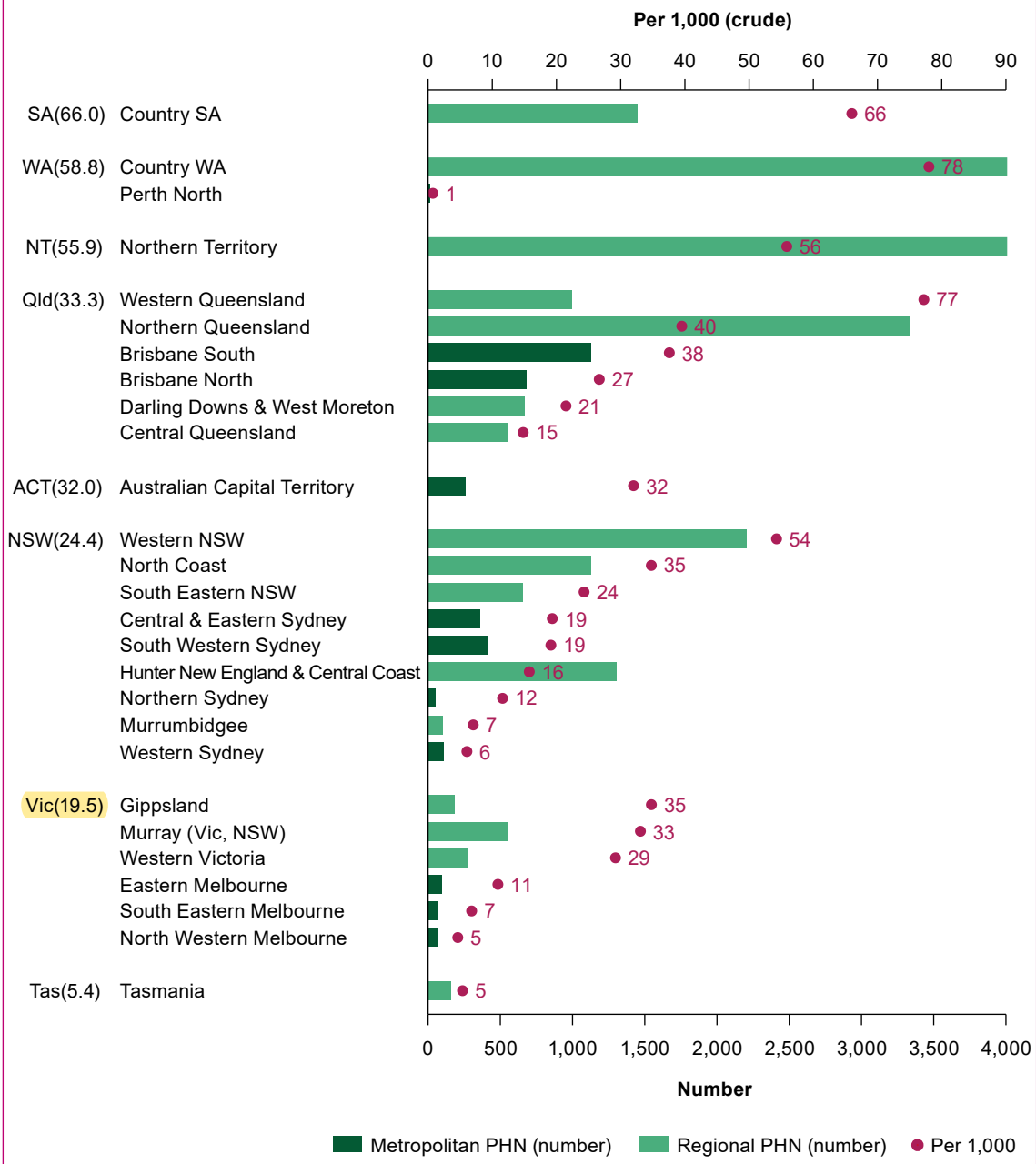


Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of Department of Health data (unpublished).

The highest number of occasions of service for VOS were provided in Country Western Australia and the Northern Territory. The highest rates of service were in Country Western Australia and Western Queensland (Figure 7.4).

Figure 7.4 VOS occasions of service for Indigenous Australians, by PHN, 2018–19



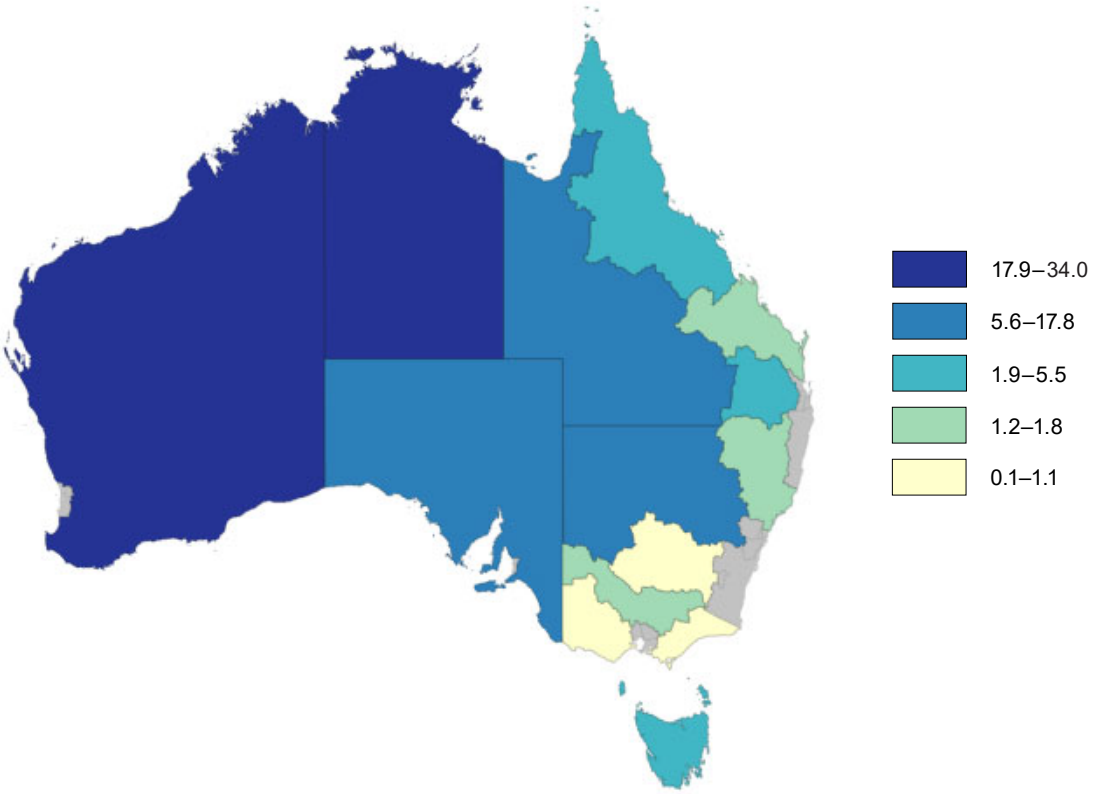
Notes

1. The rates provided in brackets next to the state/territory labels relate to the overall rate of occasions of service per 1,000 for that state/territory.
2. Data for this figure are available in the supplementary tables.

Source: AIHW analysis of Department of Health data (unpublished).

The PHNs with the highest number and rate of occasions of service for eye health for Indigenous patients under the RHOF were the Northern Territory (2,092 or 27 per 1,000), followed by Country Western Australia (2,036 or 34 per 1,000) (Figure 7.5).

Figure 7.5 RHOF occasions of service for eye health for Indigenous Australians, by PHN, 2018–19 (per 1,000)



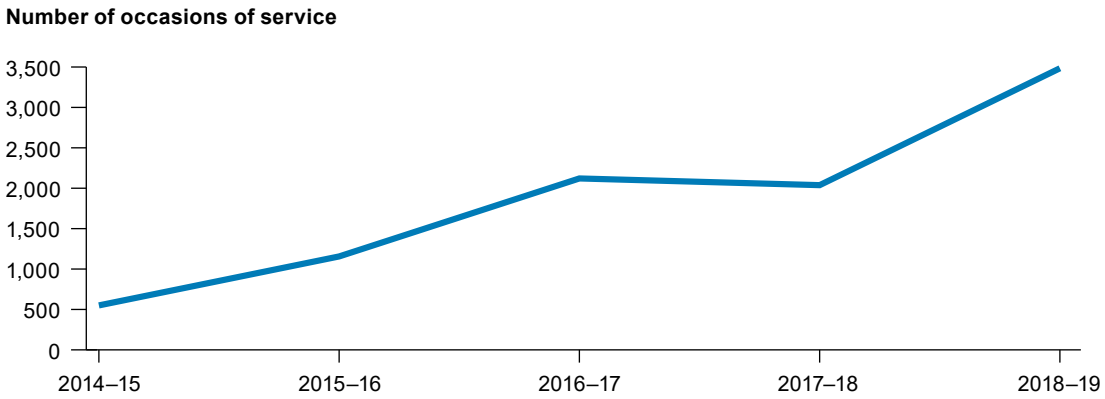
n.p = not published for PHNs with no RHOF occasions of service.

Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of Department of Health data (unpublished).

MOICDP occasions of service for eye health for Indigenous patients have risen steeply from around 500 in 2014–15 to just under 3,500 (45 per 10,000) in 2018–19 (Figure 7.6).

Figure 7.6 Trends in MOICDP occasions of service for eye health for Indigenous Australians, 2014–15 to 2018–19



Note: Data for this figure are available in the supplementary tables.

Source: AIHW analysis of Department of Health data (unpublished)

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Fadwa Al-Yaman	Indigenous Group, AIHW
Mitchell D Anjou	Indigenous Eye Health, University of Melbourne
Skye Cappuccio	Optometry Australia
Dawn Casey	National Aboriginal Community Controlled Health Organisation
Alice Church	National Indigenous Australians Agency
Carleigh Cowling	National Trachoma Surveillance and Reporting Unit, Kirby Institute
Ben Maroney	Indigenous Health Division, Department of Health
Claire O'Neill	NSW Rural Doctors Network
Jess Styles	National Aboriginal Community Controlled Health Organisation
Hugh Taylor	Indigenous Eye Health, University of Melbourne
Angus Turner	Lions Outback Vision; Royal Australian and New Zealand College of Ophthalmology
Melinda Turner	Indigenous Health Division, Department of Health

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
APY	Anangu Pitjantjatjara Yankunytjatjara
ASR	age-standardised rate
ATSR	Australian Trachoma Surveillance reports
CI	confidence interval
EESS	Eye and Ear Surgical Support Services
FTE	full-time equivalent
GP	general practitioner
IEHU	Indigenous Eye Health Unit
MBS	Medicare Benefits Schedule
MOICDP	Medical Outreach Indigenous Chronic Disease Program
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NEHS	National Eye Health Survey
NHMD	National Hospital Morbidity Database
NSW	New South Wales
NG	Ngaanyatjarra
NT	Northern Territory
PHN	Primary Health Network
Qld	Queensland
RHOF	Rural Health Outreach Fund
SA	South Australia
SAFE	surgery, antibiotics, facial cleanliness and environmental improvement
Tas	Tasmania
VASS	Victorian Aboriginal Spectacles Subsidy Scheme
Vic	Victoria
VII	Voluntary Indigenous Identifier
VOS	Visiting Optometrists Scheme
WA	Western Australia
WHO	World Health Organization

Symbols

<	less than

Glossary

Aboriginal and Torres Strait Islander: A person of Aboriginal or Torres Strait Islander descent who identifies as an Aboriginal or Torres Strait Islander. See also **Indigenous Australians**.

admitted patient: A patient who undergoes a hospital's admission process to receive treatment and/or care. This treatment and/or care can occur in hospital and/or in the person's home (for hospital-in-the-home patients). METeOR identifier: 268957.

age-standardisation: A set of statistical techniques used to remove, as far as possible, the effects of differences in age when comparing 2 or more populations.

at-risk community (trachoma): Communities classified by jurisdictions as being at higher risk of trachoma based on 1) no recent data, but historical evidence of endemicity; 2) data of active trachoma prevalence of 5% or more in children aged 5–9 years in the last 5 years; or 3) data of less than 5% active trachoma prevalence but with a recorded prevalence of active trachoma of 5% or above in the past 5 years.

Australian Refined Diagnosis Related Groups (AR-DRGs): An Australian system of diagnosis related groups (DRGs). DRGs provide a clinically meaningful way of relating the number and type of patients treated in a hospital (that is, its casemix) to the resources required by the hospital. Each AR-DRG represents a class of patients with similar clinical conditions requiring similar hospital services.

blindness: Presenting visual acuity of <6/60 in the better eye.

community-wide treatment (trachoma): The antibiotic treatment of all people in the community who weigh more than 3 kg living in houses with children under 15 years of age (Kirby Institute 2019).

hospitalisation (separation): An episode of care for an admitted patient that can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of care type (for example, from acute care to palliative care).

Indigenous Australians: Used interchangeably with **Aboriginal and Torres Strait Islander** people in this report.

non-Indigenous Australians: People who indicated that they are not of Aboriginal or Torres Strait Islander descent. Compare with **other Australians**.

other Australians: Includes both non-Indigenous people and those whose Indigenous status is not known. Compare with **non-Indigenous Australians**.

principal diagnosis: The diagnosis established, after study, to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health-care establishment. METeOR identifier: 514273.

procedure: A clinical intervention that is surgical in nature, carries a procedural risk, carries an anaesthetic risk, requires specialised training and/or requires special facilities or equipment available only in an acute care setting. METeOR identifier: 514040.

rate difference: The literal, or absolute, gap between 2 population rates; for this report, it was calculated as the rate for Indigenous Australians minus the rate for non-Indigenous Australians.

rate ratio: The relative difference between populations taking scale into account; for this report, it was calculated as the rate for Indigenous Australians divided by the rate for non-Indigenous Australians, and is interpreted as follows:

1. a rate ratio of 1 indicates there is no difference between the rates
2. a ratio less than 1 indicates the rate is lower in the Indigenous population
3. a ratio greater than 1 indicates the rate is higher in the Indigenous population.

separation: See **hospitalisation**.

vision loss: Vision impairment plus blindness.

vision impairment: presenting distance visual acuity of <6/12 in the better eye.

Trachoma treatment coverage: The proportion of Indigenous Australians in an **at-risk community** who weigh more than 3 kg and live in a house with one or more children aged below 15 years who were treated for trachoma during an episode of **community-wide treatment (Kirby Institute 2019)**.

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Related publications

This report, Indigenous eye health measures 2020, is part of an annual series. The three earlier editions, and any published subsequently, can be downloaded for free from the AIHW website. The website also includes information on ordering printed copies.

This is the fourth annual report on the Indigenous eye health measures. The measures cover the prevalence of eye health conditions, diagnosis and treatment services, the eye health workforce and outreach services. The report provides an evidence base for monitoring changes in Indigenous eye health over time, access to and use of eye health services, and for identifying gaps in service delivery.

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